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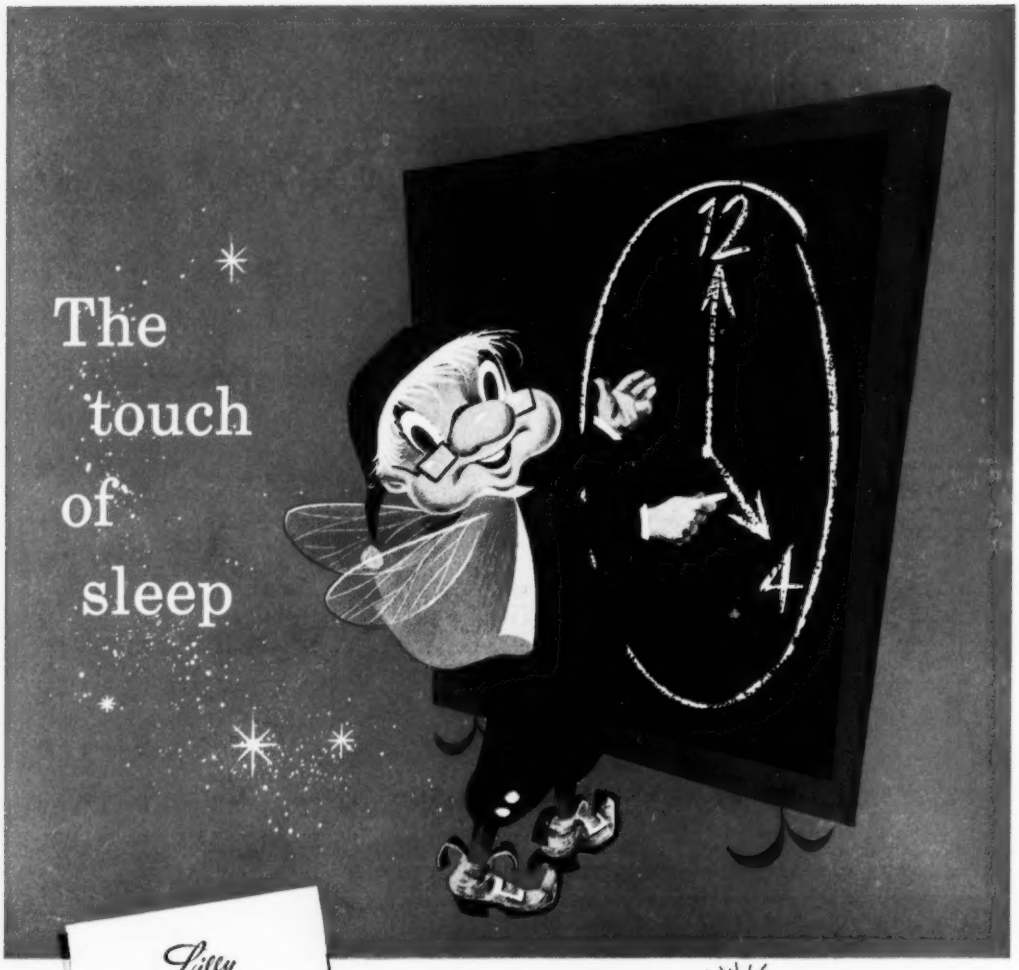

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Southwestern MEDICINE

VOL. XXXVII FEBRUARY, 1956 No. 2

EDITORIAL

Social Security

The question of social security as it affects practitioners of medicine is one that is and will be for some time controversial. Roughly one may divide the physicians into two groups; the younger men, particularly the veterans of World War II, and the older men who are beginning to think, at least, about retiring.

Interestingly, in Massachusetts, the question of social security followed these lines. The younger men, especially the veterans, were definitely in favor of the inclusion of physicians in social security, while the older men viewed the benefits of social security with a somewhat jaundiced eye.

The American Medical Association, recognizing that social security is an actuality, in Boston voted to support and urge the creation of a well qualified commission. This commission could be either governmental, private, or both.

The commission would order an impartial study of the economic, social, and political impact of social security, both as it affects the physicians and the lay personnel. The facts which would be developed from such a study should be the sole basis for objective, non-political improvements to the Social Security Act, for the benefit of all the American People.

It would seem that it is inevitable that the American physicians will have at least some type of compensation similar to that now offered to the lay public by Social Security.

An attempt has been made to present in parallel columns arguments for and against the issue of Social Security:

Arguments of the Opponents

1. The concept that the worker should contribute his quota to society's resources, and in return receive maintenance when he cannot work, is Marxist dogma.
2. It would destroy individual initiative and private effort in the welfare field.
3. The amounts being contributed currently by employers and employees are far short of what will be necessary ultimately to provide promised benefits.
4. This will place unbearable tax burdens on our children and the citizens of the future.
5. Self-employed persons contribute twice as much as employed workers.
6. Eight out of ten physicians are in active practice after age sixty-five. They do not receive benefits.
7. It is unfair to tax physicians for old age and survivors' benefits that they may never receive.
8. Old age and survivors' insurance is not insurance, since (a) there is a decreasing relation between the amount of taxes and benefits, (b) there is no contract between insurer and insured, (c) there is no loan or surrender value, (d) when eligible persons aged sixty-five to seventy-two earn more than $1200 per year, their benefits are reduced to nothing, but their taxes continue.

Arguments for the Defense

1. If the concept is acceptable, the label "Marxist dogma" is irrelevant.
2. Individual initiative might be stimulated, if future hazards were lessened. Private effort in the welfare field might well become less necessary if the aged were protected against penury.
3. Wages and salaries currently amount to nearly 200 billion dollars annually. Four per cent of this sum (the current OASI tax) can provide eight billion dollars each year. At present 7.7 million beneficiaries (out of 12 million persons over age 65) receive only 5.7 billion dollars each year. Ultimate benefits will be higher, but so will taxes, reaching eight per cent by 1975.
4. Eight per cent of payroll is not an unbearable burden.
5. Not twice as much; half again as much.
6. They do not need them.
7. No more unfair than to tax childless married couples for the support of public schools.
8. If it makes anyone happier, let us not call it insurance. Call it old age and survivors' benefits or assistance or annuity payments.

(Continued on Page 93)

CURRENT THERAPY

Infections of the Urinary Tract

By Jack A. Bernard, M. D., El Paso

Infections of the urinary tract are frequently encountered in our everyday practices and the routine therapy would seem simple. However, the development of chronic infections or drug resistant organisms and the possibility of drug toxicity may create quite a problem.

In the cases of acute infection, the infection usually responds well to penicillin or one of the other agents which will be outlined below. In the chronic infections, obstructive uropathy must be eliminated and more extensive bacteriological studies must be carried out.

Simple Gram Stain

A simple Gram stain will differentiate the Gram positive organism from the Gram negative organism. The commonly offending Gram negative organisms include Escherichia coli, Aerobacter aerogenes, Pseudomonas aeruginosa, Proteus vulgaris, and the paracolon bacilli. The Gram positive organisms include Staphylococcus aureus and albus and Streptococcus fecalis.

Penicillin is the drug of choice in the staphylococcal and streptococcal infections. It may give some bacterial suppression of the gram negative organisms also.

Insensitive Staphylococci

The staphylococci encountered are becoming more and more insensitive to penicillin. Erythromycin is reserved for these penicillin resistant staphylococcal infections.

For the gram negative bacilli and for the penicillin resistant organisms one of the sulfonamides is indicated. Gantrisin (or Elkosin) or Thiosulfil are most useful. Gantrisin is highly soluble and therefore there is little danger of crystalluria. Recommended dosage is six to eight grams daily.

Gantrisin Now Used

The usage of sulfadiazine has largely been replaced by Gantrisin. If used, fluids should be forced and the urine observed for crystalluria. The triple sulfonamides would be safer in that their solubility is greater whereas their therapeutic effect is the same as a single sulfa. Actually the above have largely been replaced by Gantrisin or one of the other highly soluble sulfas.

Streptomycin and Dihydrostreptomycin should be reserved primarily for tuberculous infections and for those organisms specifically sensitive to these two drugs as bacterial resistance, and actually dependence, occur readily. Dihydrostreptomycin is less toxic than streptomycin to the vestibular apparatus but is more apt to cause deafness.

Tetracycline Compounds

The tetracycline compounds are active against a wide variety of microorganisms, including E. coli. They are more likely to produce toxic reactions than are the sulfonamides and also more likely to lead to the development of drug resistant organisms. The common usage of these antibiotics for minor infections is therefore not recommended.

Chloromycetin, because of its serious toxic reactions, should be reserved for those severe infections in which other drugs have been ineffective and where the organism is resistant to the other agents but sensitive to chloromycetin.

Polymyxin B Also Used

For Pseudomonas aeruginosa infections, a combination of terramycin and streptomycin is recommended. Polymyxin B has also been used in this infection and other overwhelming infections where all other antibiotics have failed. It is a severely nephrotoxic and neurotoxic drug. Dosage is 2.5 mg. per kilogram of body weight a day intramuscularly for no more than seven days. Neomycin orally 250 mg. every six hours for an equal period of time has also been used. Its toxicity is similar to Polymyxin.

The nitrofuran, Furadantin, is effective against many Gram negative and Gram positive bacteria common to urinary tract infections, especially Proteus. It is also effective against certain protozoa. It has a low toxicity. A few patients develop nausea or vomiting. It is advantageous in that it can be given over long periods of time. Dosage is five to seven mg. per kilogram. Side effects may be reduced by avoiding higher dosage.

Summary

In summary, the various antibiotics and chemotherapeutic agents have been listed for the common urinary tract infections. For the acute infection, the routine sulfonamide, such as Gantrisin, is usually sufficient. Adequate dosage for sufficient length of time should be emphasized: six to eight gm. daily for five to seven days. For recurrent and chronic infections, a longer period of treatment with gradual reduction in dosage is indicated. Careful cultures and sensitivity tests should be done, although in vitro tests are not always indicative of the in vivo response. Finally, the possibility of obstructive uropathy, renal calculi, tuberculosis, malignant disease must be always kept in mind and their presence eliminated.

Acknowledgement is made to Dr. J. D. Bozzell for his helpful criticisms and suggestions.

MONTHLY CLINICAL PATHOLOGICAL CONFERENCE
EL PASO GENERAL HOSPITAL

FREDERICK P. BORNSTEIN, M. D., EDITOR — CASE NO. A-534
PRESENTATION OF CASE BY DR. CHARLES P. C. LOGSDON

History — Dr. Nathan Kleban:

A 55 year old unmarried Latin-American woman who had worked as a housemaid entered El Paso General Hospital for the first time on September 20, 1955, because of difficult breathing for one month.

Three months before admission swelling of the lower extremities appeared. One month before admission the patient began to be distressed on exertion by shortness of breath, which progressed to dysphea at rest. At about the same time she consulted a doctor because of a constricting pain in both lumbar areas, which was recurrent and more bothersome while at work than rest. The patient lost her appetite, experienced nausea, and began to vomit.

In Good Health

Except for chicken pox and measles in childhood, and hysterectomy for a "tumor" at age 40, the patient had been in good health until onset of present illness. For about one year there had been urinary frequency but with small volume. For the last month she had urinated only two to three times a day. Chest pain, hemoptysis, other bleeding or easy bruising, orthopnea, and weight loss were denied. There was no previously known tuberculosis, pleurisy, pneumonia, or heart disease.

Carcinoma of the cervix had been responsible for the patient's mother's death at age 50.

Physical Examination:

Temperature 98.8, pulse 88, respirations 36, blood pressure 100 systolic, 50 diastolic. The patient was suffering severe respiratory embarrassment, was perspiring profusely, appeared chronically ill and in poor state of nutrition. Circumoral pallor was noted. Percussion note was dull at both lung bases. A few moist rales were heard over the right lower lung field. Heart sounds were distant. Rhythm was regular.

Abdomen Protuberant

The examiner was uncertain about a murmur, did not specify location. The abdomen was protuberant. The right side of the abdomen appeared more distended and was tympanitic compared with resonance to dullness on the left. Liver and spleen were not palpated, were thought not enlarged. There was slight CVA tenderness. Edema of feet and ankles was observed.

Hospital Course:

Despite denial of othopnea the patient preferred the upright to recumbent position. Intra-venous aminophylline and oxygen by nasal catheter were administered. On the day following admission a thoracentesis was performed with removal of 1450 cc. of fluid from the left pleural space and 150 cc. from the right.

The fluid from the left was first serous, then slightly bloody. That from the right was serous. Respiratory distress was diminished. On the following day two liters of air and 300 cc. of fluid were removed from the left pleural space.

Dyspneic and Orthopneic

A consultant noted that the patient was dyspneic and orthopneic. Blood pressure 96/70, heart rate 100. Heart sounds were of "poor quality and intensity." Murmurs, rub or gallop were not noted. Neck veins were flat with patient in upright position. Fluid and air were thought to be present in the left chest, fluid at the right base. Neither liver nor abdominal masses were palpated. There was 4 plus edema of the back, abdominal wall and thighs; 2 plus of the legs with brawny skin.

Indwelling Catheter

An indwelling catheter was inserted. The patient was given a salt free low protein, high carbohydrate, moderate fat diet which she took fairly well for a day or two. Thiomeric 2.0 cc. was given the second day.

On the third day the blood pressure dropped to 70/60 and i-v levophed was started. One and two tenths milligrams of digitalis were given in divided doses over 24 hours. Diet was changed to liquid. Thiamine 25 mg. was given i-v on the fourth day and 100 mg. I. M. daily thereafter. Brewers yeast, 30 gms. tid. was prescribed.

Thiomeric

Thiomeric 2.0 cc. was given on the sixth and eighth days. Daily urine output never exceeded 850 cc. Levophed was stopped on the sixth day and blood pressure remained 90-80/50.

A record of "slight dyspnea" was made on the seventh day. Stools became soft, then liquid, then changed from brown to yellow in color. Gross hematuria occurred on the ninth day after she complained of severe back pain. There was fever at no time. Pulse was 100 through most of her hospital stay.

Patient Restless

The patient was generally restless, uncomfortable, and ate poorly. On the 10th hospital day, an hour

and a half before death, blood pressure was 90/44, temperature 97.2, pulse 84, respirations 24.

She was unable to sleep, complained of a headache. The nurse heard a deep sigh and a brief stertorous breathing, observed a convulsive movement and a final gasp; then respiration ceased. Pulse and blood pressure were not obtained.

X-RAY REPORTS:

September 20, 1955: Chest film: Bilateral pleural effusions secondary to congestive failure.

September 21, 1955: Flat plate of abdomen: Abdomen negative for evidence of mechanical obstruction. Possible enlarged liver.
Chest film: Bilateral hydro-pneumothorax following removal of pleural effusions.

September 23, 1955: Chest film, portable: Increasing bilateral pleural effusion, most probably on the basis of congestive failure.

September 24, 1955: Chest film, portable: Decreasing pleural effusion.

September 25, 1955: Chest film, portable: Pneumothorax on the left. Expanded right lung.

September 26, 1955: Chest film, portable: Hydro-pneumothorax.

ELECTROCARDIOGRAMS:

September 20, 1955: Sinus tachycardia, low voltage, complete left bundle branch block.

September 21, 1955: Sinus tachycardia, low voltage, ST segment depression, LBBB no longer present. Coronary occlusion with septal involvement?

September 23, 1955: Bundle branch block, unclassified, probably left.

September 24, 1955: Bundle branch block, unclassified, probably left. ST-T wave changes secondary to wide QRS and also due to digitalis.

September 26, 1955: No significant change.

September 27, 1955: Low voltage in limb leads and of the R wave in V4-6, ST elevated with positive T AVR.

September 28, 1955: No significant change except for difference in V leads probably due to electrode placement.

LABORATORY:

September 20, 1955: Urinalysis: Straw, clear, acid, 1.014, albumin trace, sugar negative, WBC 8-10/HPF. RBC occasional, numerous hyaline and waxy casts.
Hb, 13.8 gms., RBC 4.21; WBC 11,570; stabs 2, segs 86, lymphs 8, monos 3, eos 1.
Kline exclusion, negative.
Blood urea nitrogen 46.7 mg. per cent.

September 21, 1955: Blood urea nitrogen 50.6 mg. per cent; CO_2 combining power 20 meq/l; chloride 350 mg. per cent; serum albumin 3.17, globulin 2.42
Hematocrit 47; ESR 26 mm/hr.

September 22, 1955: Pleural fluid: WBC 300, polys 192, lymphs 108; RBC 2628, 2358 crenated; sugar 123 mg. per cent; protein 750 mg. per cent; no growth in 48 hours; no AFB, no fungi on smear; cell block for tumor cells.

September 23, 1955: Sodium 120 meq/l; Potassium 3.6 meq/l.

September 24, 1955: Hematocrit 47 per cent; ESR 40 mm/hr.

September 25, 1955: Urinalysis: straw, cloudy, acid, 1.010, albumin trace, sugar negative, WBC innumerable, RBC 8-10/HPF.
Antistreptolysin 0 titer; 12 units.

September 27, 1955: L.E. test: No L.E. cells found. Blood culture: no growth in two weeks

September 28, 1955: Hematocrit 42 per cent; ESR 27 mm/hr.
Urinalysis: Red, gross blood, cloudy, acid, 1.012, 2 plus albumin, sugar negative.
Thorne test: Total eosinophils before ACTH: 720/cu. m.m.; after ACTH: 288/cu. m.m.
Hb. 12.0 gms; RBC 4.36; WBC 24,100; stabs 2, segs 86, lymphs 8, monos 2, eos 1, baso 1; slight hypochromia.

DIFFERENTIAL DIAGNOSIS:

Dr. Charles P. C. Logsdon

The essential points in the history are edema, of three months' duration; constricting pain in the lumbar region which came on one month before admission and later anorexia, nausea and vomiting.

According to the history, the patient first had edema and then two months later had dyspnea. This would suggest, of course, that the heart was not the cause of the edema.

When the patient came in, she had anasarca apparently without a cyanosis. She had a normal temperature, and a rather low, but not abnormally low blood pressure.

Blood Chemistry Normal

Her blood chemistry was essentially normal. There were some interesting abnormal EKG's which were not stable, and these X-rays which demonstrate a bilateral pleural effusion. Perhaps the most interesting occurrence before the patient died was gross hematuria on the ninth day.

It is rather interesting that this patient should not have had anemia and that the sedimentation rate was apparently not too abnormal. On one occasion, I think, it was recorded at 40 and on two occasions at 27. The serum proteins were normal.

Other Tests

The urine, while not normal, was certainly not abnormal enough to suggest any process which might have been causing what the patient was ill of and what she died of. Then there were certain other tests which were normal, such as the Thorne test, which was quite a normal response — the most perfectly normal response I think I have seen in El Paso — and the blood chemistry, which, while it was not normal, was not such, as far as I could see, as to be diagnostic of anything.

Electrocardiograms Abnormal

With the electrocardiograms so distinctly abnormal, there would be a tendency to try to connect the heart with whatever the patient had. Actually, I think the question of whether or not the patient had congestive failure and whether or not congestive failure was responsible for the anasarca, should be disposed of, if possible. It certainly appears from the protocol that she did not have congestive failure.

Fair Picture

I don't believe we have a good X-ray picture of the heart, but here's a fair one. The heart is not abnormal in size. With the normal heart size and such anasarca as we see here, I think that the only kind of heart disease producing such a syndrome would be a constrictive pericarditis, in which case there should be a phenomenally high venous pressure, which this patient did not have.

Liver Never Palpated

Furthermore, I believe the liver was never palpated and I think there was a note made that perhaps it could have been palpated had it been enlarged. In general, the patient did not look like suffering from congestive failure. There was no gallop rhythm, there was no extreme tachycardia. I think the heart rate ran around 100. There were no murmurs. There was just nothing to suggest heart disease except an abnormal EKG — which was very definitely abnormal.

The electrocardiograms — there were quite a few of them taken —. showed either left bundle branch block or a pattern in which the bundle branch block tended to disappear — at least the most characteristic morphologic features of that bundle branch block disappeared. Certain others remained. Conduction time was normal in the QRS complex but the ST-T changes of that left bundle branch block remained, suggesting that it was a variation within a block.

Heart Disease Indicated

A left bundle branch block is, in the great majority of cases, over 99 per cent of cases, a finding indicating heart disease, and an intermittent left bundle branch block — that is, when it appears and disappears — is not unknown. It's seen in old arteriosclerotics and those are the only cases I know in the literature in which left bundle branch block has been intermittent. But it seems to me that this patient never quite got out of that bundle branch block. She has very low voltage in her EKG which could be accounted for on the basis of the anasarca.

Age Is 55

Now, the patient's age is 55, which could account for a left bundle branch block, but it would be hard to imagine her having that much pathology — that is, sufficient to produce a left bundle branch block without having apparent heart disease, especially in a heart that was under as much strain as it was in this case.

But, at any rate, I think there is insufficient evidence to consider the heart as an important etiological factor in this patient's illness, and I would have to assume that it was an incidental disease — whatever was wrong with her heart — and it would, in the great majority of cases, be coronary sclerosis or some left sided lesion which was not present here apparently.

Left Side Lesion

The left sided lesion, that is. It would be nice to tie everything together in one of the collagen diseases. The electrocardiographic lesion, the anasarca, the — well, that's about all, because you can't put your finger on a great deal more that this patient had.

But with the sedimentation rate that was on two occasions around 27, with no anemia, no significant change in the white count that I recall — there was a moderate lymphocytosis — it would be hard to build up much of a case for a very malignant collagen disease that would kill this patient in three months' time.

Unexplained

Another thing that is quite unexplained is the constricting lumbar pain which the patient had at the time — or about the same time — as the dyspnea appeared. I don't know what that could have been. Now, it might be well at this time to point out that liver function was not apparently impaired although we don't, I believe, have full studies on that. But at least there was no hypoproteinemia to account for the edema.

Kidney Findings

The kidney findings were not remarkable except for a BUN of 50. I don't know at what point an elevated BUN is compatible with the edema in a given case, or with the heart failure in a given case, and at what point it has to be a combination of things, but I think, perhaps, a BUN of 50 might well be compatible with extra renal disease in this patient.

Little Left

So, ruling out serious renal disease, if you can, and I think you can, there is no liver disease, no hypoproteinemia, no congestive heart failure, none of the collagen diseases, so it leaves you very litle. In fact, it leaves you practically nothing.

A day or two before she died, she had gross hematuria, which would indicate that she did have something happen in her urinary tract.

Final Remark

Anyway, a final remark of mine on the case. I would say that there is insufficient evidence for congestive failure in this case. I don't think it existed. Whatever heart disease there was, was probably incidental. I don't think collagen disease would be likely — I mean, with a patient dying as rapidly as this with no anemia, with not a marked elevation of the sed. rate, with none of the other things that you find in a collagen disease.

Malignancy Indicated

Therefore, I think a malignancy of some sort — I'd hate to say what sort — to the pleurae is probably the most likely diagnosis. And of course the malignancy must have been somewhere around the kidneys. A peritoneal malignancy might in some way have accounted for the constrictive pains the patient has and might later have involved the kidneys and then given us the hematuria.

Dr. Jack C. Postlewaite:

Well, the patient had three months to get into this shape and she died an acute death. She had a pulmonary embolism. She had multiple pulmonary infarctions which gave some bloody fluid. The one trick in the case that puzzles me is why this blood in the tap of the ascitic fluid. Now, it's true the admission urine is not normal.

Cellular Findings

She had cellular findings in this urine, which make one wonder if something obscure in the kidneys was going on other than a malignancy and one wonders if this patient did not have typical fluid problems of alteration of the electrophoretic pattern not necessarily shown in the AG ratio.

In Acidosis

Also in the cations the sodium and potassium probably have been altered. Notice, she's in acidosis. And all this possibly was brought on during treatment here. However, we don't have the admission chemistries and we notice that terminally her white cell count was up to 24,000.

Talk on Resins

I had an opportunity to hear a talk on cation and anion resins. The point I'm getting at is that these stresses that occur can alter the body physiology to the point of being incompatible with life. And so, at post mortem, we find that many times we don't have a cause of death.

Glomerulonephritis

I think she had a pulmonary embolism that stopped her. And I think she had a glomerulonephritis which presumably was set off by some streptococcal infection which antedated the problem, and nobody remembered that she had a pathological physiological change of her fluid balance. She went into failure with fluid in all spaces as well as a true anasarca. Finally, her pulmonary embolism cut her down.

Dr. Celso C. Stapp:

I notice on the protocol they mention nothing about a vaginal examination being done on this woman, and I don't think that we can leave it out in our consideration of what's wrong. I'm not saying that it contributes greatly, but it should be included in differential diagnosis of anyone with a pleural effusion.

That's your possibility of a Meigs' syndrome. It can be rather extreme and in a person who is already debilitated with the kidney damage that this woman has — or had, I should say — and her other difficulties I think it should be added to the differential diagnosis.

Dr. H. M. Gibson:

I'd like to start out backwards about the kidney disease. The patient was noted to have pain in the back region, and gross hematuria. Those symptoms are absolutely classical for infarction. As far as the question of additional kidney pathology on admission, both kidney shadows can be visualized in this film.

Appear Normal

They appear to be normal in size, location and position. I cannot tell about retroperitoneal disease except the kidneys do not appear to be displaced, which would be against retroperitoneal disease. As far as nephritis is concerned, acute glomerulenephritis usually, I believe, raises the blood pressure and certainly raises the sedimentation rate tremendously.

Further Comment

Further, if the blood count or the hematocrit is accurate I have never see chronic renal disease produce acidosis and this degree of elevation of the urea nitrogen and still have a normal blood count. I do not see any definite evidence of a chronic renal disease in this particular case. I do think that the patient had a terminal renal infarction.

Dr. Joe C. Carter:

I would like to make a different diagnosis, getting back to the help of just one finding. There is no question but what pleural effusion occurs in about 10 per cent of congestive failure. The rest of them are infections or malignancies. In this case, the pleural fluid contained less than one per cent of protein. 76 per cent of the cases of exudate contain three or more per cent. Or at least 2½ per cent.

Transudate

On that basis, I would say that this patient had a transudate. It was not inflammatory. It was not a neoplasm. And, incidentally, an infarction also gives you an exudate rather than a transudate. But not having see the EKG's and considering the fact that the left bundle branch block obscures a great many findings in the heart, I would say that this patient had had two infarctions — one before she came in, and one after she came in.

Mural Thrombi

Of course, an interstitial myocarditis or an idiopathic affection of the heart can also give you mural thrombi and maybe produce this clinical picture and also in a reasonable length of time, like two or three months.

CLINICAL DIAGNOSIS:

Congestive failure, etiology undetermined.

Dr. Logsdon's Diagnosis:

Carcinomatosis of pleurae with primary lesion in abdomen.

ANATOMICAL DIAGNOSIS

1. Adenocarcinoma of the liver with compression of the inferior vena cava.

2. Pleural and pericardial carcinomatosis.

3. Ascites.

PATHOLOGICAL DISCUSSION

Dr. Bornstein:

I feel one of the main purposes of a Clinical Pathological Conference is to help to break up the habit of thinking in conditioned reflexes, such as: edema and dyspnea equal heart failure.

I think Dr. Logsdon has succeeded very brilliantly in showing that these two conditions are not linked inseparably.

Slender Woman

On autopsy, we found a rather slender woman. After opening the chest, there were about 1500 cc. of cloudy fluid in each pleural cavity. Both the pleurae and the pericardium were studded with numerous extremely firm greyish white nodules which measured up to one cm. in greatest diameter. The visceral pericardium was not involved.

Situation Revealed

The search for the primary tumor revealed a situation which is only understandable if you visualize the peculiar anatomical relationships between the inferior vena cava and the liver. The tumor was located in the part of the liver directly adjacent to the vena cava. It was an extremely firm greyish white nodule which measured about four cm. in diameter and had grown directly into the wall of the vena cava.

Considerable Compression

The tumor had produced a considerable compression of the lumen of this vein. Histologically, the tumor was composed of structures resembling biliary canaliculi and therefore should be classified as an adenocarcinoma of the liver arising from small bile ducts.

Also present was a small amount of ascites. The kidneys were grossly and microscopically normal.

Peculiar Location

The peculiar location of the tumor explains the clinical picture fairly well. Compression of the vena cava has often been responsible for peripheral edema.

The pleural effusion was obviously due to the carcinomatosis. Dr. Logsdon, in his differential diagnosis, suggested the possibility of the pressure of a constrictive pericarditis and I am quite sure that the carcinomatosis of the pericardium should have about the same effect.

I was unable to discover a structural change responsible for the heart block. We did not take a sufficient number of sections through this important area to confirm or deny the presence of a small metastasis in this region which would have offered a nice explanation for the heart block.

Summary

In summary, then, we have a woman who died rather rapidly, with edema in all places being a most prominent symptom. The mechanism for this edema in this particular case is double in character, being caused by: (1) a direct compression of the inferior vena cava due to tumor, and (2) a carcinomatosis of the pleural and pericardial cavities.

Social Security

(Continued from Page 87)

9. Even if the concept of Social Security is acceptable to you, *compulsory* inclusion of physicians is repellent, and is the first step toward complete governmental control. We should insist on the right of the individual to decide whether or not he shall be included under OASI.

9. A social program that depends on the contributions of participants for its financial support must include every member of each covered group. Voluntary participation on an individual basis would lead to chaos. If only those who wished to benefit by the plan were permitted to join, and those who do not need it refused to contribute, the program would become a government dole, and would have to be supported out of general funds.

It becomes obvious that this is a controversial issue. The issue most certainly in all probability must be met and acted upon. It quite definitely is a problem which requires consideration and thought because its acceptance might well lead to repercussions. Each individual physician must study the concept that this issue represents and decide whether or not the label "Marxist dogma" is relevant or irrelevant.

APHORISMS and MEMORABILIA

Truths and Concepts Concerning the Genito-urinary System

By Andrew M. Babey, M.D., Las Cruces, N. M.

1. "Pyelonephritis is the most common renal lesion found at autopsy, and occurred in 15 to 20 per cent of autopsies performed at large general hospitals. In about one-third of the cases of pyelonephritis found at autopsy the lesion was of major importance as a cause of death and this relationship has not diminished significantly since the advent of antibiotics." Edw. H. Kass; *The Amer. Journ. of Med.;* May, 1955; P. 764.

2. "Chronic pyelonephritis is a more frequent cause of Bright's disease than is chronic glomerulonephritis and is the most common renal lesion in uremia. Acute exacerbation of pyelonephritis is considered to be the common precipitating factor in uremia." E. Kass; *loc. cit.;* P. 764.

3. "Pyelonephritis occurs about four times as often in diabetics who have come to autopsy as in non-diabetics." E. Kass; *loc. cit.;* P. 764.

4. "Pyelonephritis is also one of the most common complications of pregnancy and occurs in about one-fifth of the cases of toxemia of pregnancy." E. Kass; *loc. cit.;* P. 764.

Symptoms

5. "Symptoms referable to the lower urinary tract, such as dysuria, frequency and urgency, are more common in pyelonephritis than are flank pain, fever, chills and other generalized evidence of sepsis." E. Kass; *loc. cit.;* P. 764.

6. "Chronic pyelonephritis may be present, and may heal, without giving rise to symptoms or signs, or even obvious pyuria." E. Kass; *loc. cit.;* P. 765.

7. "Absence of bacilluria when symptoms and signs suggest renal infection, should suggest the possibility of ureteral obstruction." E. Kass; *loc. cit.;* P. 765.

8. "For practical clinical purposes the Gram stain of the freshly collected and unsedimented urine will differentiate contamination from infection, since organisms are readily found in stained specimens of urine when about 10 bacteria or more per ml. are present." E. Kass; *loc. cit.;* P. 766.

9. "Because the emergence of resistance may be so complete and because streptomycin, when it is effective, usually kills bacteria so rapidly, treatment with this drug ought not to be prolonged more than four to five days except under unusual circumstances." E. Kass; *loc. cit.;* P. 772.

Brief Review

10. "A brief review of older methods of treatment of urinary infections shows that ketone bodies, mandelic acid and methenamine mandelate, when used properly, are highly effective in the treatment of most acute uncomplicated infections of the urinary tract but relatively ineffective in the treatment of chronic and complicated infections." E. Kass; *loc. cit.;* P. 778.

11. "Under proper conditions correlation is better than 90 per cent between antibiotic sensitivity and elimination of bacteria from the urine. However, in chronic, complicated infections, reinfection and relapse rates are so high that ultimate bacteriologic control probably does not exceed 10 per cent." E. Kass; *loc. cit.;* P. 779.

12. "Prophylactic use of drugs in patients with inlying catheters is probably valueless and serves merely to convert the bacteriologic flora from susceptible to resistant to the prophylactic agent." E. Kass; *loc. cit.;* P. 779.

13. "Joekes, Lowe, and I prescribed a high-carbohydrate high-fat diet for anuria, but I am certain that a high-carbohydrate diet is sufficient. I have progressively reduced the fat-content of the diet, and sometimes leave it out altogether, because diarrhea develops in some patients fed on some batches of peanut oil." G. M. Bull; *The Lancet;* April 16, 1955; P. 779.

Satisfactory Method

14. "In severely azotaemic patients (blood-urea level above 100 mg. per 100 ml.) with chronic renal lesions, a satisfactory method of deciding on the optimal 'rate of' urine flow is to give a basic 800 ml. of water, plus a volume of fluid equal to the previous day's volume of urine, plus about 200 ml. The urine flow will increase, and the procedure can be repeated until the urine flow is steady, or an inconveniently large intake of fluid is reached. It is particularly important in these chronically azotaemic patients that the fluid intake should not fall. A great many patients of this sort must have died as a result of ill-advised restriction of fluids, for a concentration test or for pyelography. The main value of the former test is in the less severe renal lesions, and I believe it should not be used in patients with a blood-urea level above 100 mg. per 100 ml." G. M. Bull; *loc. cit.,* P. 779.

15. "The most convenient method of dealing with hyperpotassaemia is to administer large quantities of glucose, which moves into the cells, taking with it potassium to form a glycogen-potassium complex." G. M. Bull; *loc. cit.,* P. 780.

16. "Wherever possible it is safest to administer potassium by mouth, even in depleted patients. Up to 10 g. per day of KCl may be given. Where it is necessary to administer it intravenously it may be given in concentrations of up to 2 g. per litre of infusion fluid, at a rate of not more than 1 g. per hour." G. M. Bull; *loc. cit.,* P. 780.

Water and Electrolytes

17. "Contrary to earlier beliefs, the most important substances in the genesis of the uraemias are not the organic end-products of nitrogen metabolism but water and electrolytes." G. M. Bull; "The Uraemias," *The Lancet;* April 9, 1955; P. 731.

18. "It is unfortunate that in most patients there are no presenting symptoms and signs of hyperpotassaemia. The patient dies suddenly of cardiac arrest. Very rarely indeed, hyperpotassaemia may be accompanied by a flaccid hyporeflexic generalized paralysis, clinically indistinguishable from that which may occur with hypopotassaemia." G. M. Bull; *loc. cit.;* P. 731-732.

19. "Hypercalcaemia is very uncommon in renal failure, and where it occurs it is usually the cause rather than the result of the failure, as in vitamin-D intoxication, sarcoidosis, hyperparathyroidism, and myelomatosis." G. M. Bull; *loc. cit.;* P. 732.

20. "Infections are important in two ways; they may prove fatal because of the toxemia; but also they may increase metabolism and so flood the system with end-products of tissue breakdown, disturbing an already precarious state of water and electrolyte balance. Release of potassium from cells as a result of this katabolism is of special importance in the anurias. Thus in the management of renal failure the prevention and treatment of infection and its consequences require careful attention." G. M. Bull; *loc. cit.;* P. 736.

Death Likely

21. "The only chemical abnormality that is likely to cause death in the first week of uremia is potassium intoxication." W. H. Meroney & R. F. Herndon; "Management of Acute Renal Insufficiency"; *Journal of Amer. Med. Ass.;* July 3, 1954; P. 878.

22. "A deficit of plasma calcium is of cardinal importance during oliguria, because calcium is a specific antagonist of potassium and hyperpotassemia and hypocalcemia occur at the same time. As the plasma potassium level rises, the degree of toxicity recorded by the electrocardiogram is consistent with it only if the plasma calcium level is maintained; otherwise, the electrocardiographic abnormality and the threat to the patient's life are greatly increased." W. H. Meroney & R. F. Herndon; *loc. cit.,* P. 878.

23. "Replacement of the calcium deficit produces a striking improvement in the electrocardiogram, which then is reverted to that degree of abnormality characteristic of the plasma potassium level. The improvement following a single intravenous injection of calcium, however, is very transient." W. H. Meroney & R. F. Herndon; *loc. cit.,* P. 878.

24. "Sodium and potassium are inversely related in the plasma of the oliguric patient; raising the plasma sodium concentration causes a fall in plasma potassium concentration and modifies the electrocardiographic effects of potassium intoxication." W. H. Meroney & R. F. Herndon; *loc. cit.,* P. 880.

Sodium Effects

25. "Sodium, in addition to depressing the plasma concentration of potassium, may also have some antagonistic effect similar to that of calcium." Meroney and Herndon; *loc. cit.,* P. 880.

26. "Infusions of hypertonic solutions of sodium salts provide an effective and practical means for modifying potassium intoxication." Meroney and Herndon; *loc. cit.,* P. 880.

27. "While calcium antagonizes the effects of potassium without changing the quantity present in the plasma and sodium forces potassium into cells by some physicochemical means, glucose carries potassium into cells by a more active process. As glycogen is formed, potassium, as well as phosphate, is incorporated into the carbohydrate complex; this is an effective, though slow, method of controlling potassium intoxication." Meroney and Herndon; *loc. cit.,* P. 880.

28. "If dextrose is to be used effectively by the intravenous route, it should be given continuously. Intermittent intravenous injection of dextrose causes a sharp spike in blood sugar level followed by hypoglycemia. The hypoglycemic period has the double disadvantage of failure to remove potassium during that period and provocation of glycolysis with further release of potassium to the plasma. Also, if nutrition is limited to intermittent intravenous feedings of dextrose, the period between infusions is one of relative starvation, which is characterized by cell destruction and release of potassium." Meroney and Herndon; *loc. cit.,* P. 881.

Southwest Ob-Gyn Meeting Set For Tucson Nov. 12 and 13

Annual meeting of the Southwest Obstetrical and Gynecological Society will be held in Tucson November 12 and 13, 1956, Dr. Hollis H. Brainard of Tucson, President of the Society, has announced.

Members of the Society are from Southern California, Nevada, Arizona, New Mexico, and El Paso County in West Texas.

ORIGINAL ARTICLES

The Use of 'Ilotycin' (Erythromycin) in Various Dermatoses

By Sidney N. Gellis, M. D., and Kenneth C. Baker, M. D.,* Tucson

'Ilotycin' (Erythromycin)** has been identified as a strain of Streptomyces erythreus and is useful in infections caused by gram-positive bacteria which are sensitive to its action. It is particularly useful in persons who are hypersensitive to penicillin or other antibiotics. We attempted this study to determine the incidence of side-reactions such as nausea, vomiting, diarrhoea and to determine whether monilial eruptions developed during the period of treatment. Our series included 32 patients and consisted of 28 hospitalized patients and four out-patients. We were able to observe our patients carefully and at frequent intervals during this study and photographs were taken to illustrate the progress of the various dermatoses treated.

Plan of Treatment

We planned to use the medication both orally and locally in some patients as indicated, while in others either oral administration or local application was resorted to. Our aim was to discontinue the medication as soon as possible after it had served its purpose. In some cases we felt that the medication was not effective after a sufficient trial period and it was then discontinued. In those cases where sufficient improvement was noted within a few days to a week, we reduced the dosage accordingly.

Preparations Used

Tablets 'Ilotycin' (Erythromycin) crystalline 200 mg., were used in our study. The average starting dose was 800 mg., daily, divided into four equal doses. In most of our cases the original dosage of 800 mg., daily was reduced to 600 mg., daily by the end of the first week and then further reductions in dosage, gradually to 200 mg., daily were carried out.

For local application, 'Ilotycin' (Erythromycin) ointment, crystalline, 10 mg., per gm., was employed. The patients were instructed to apply the ointment to the affected areas twice daily.

Cases Treated

Of the 32 patients treated in this series, 22 received the drug both by mouth and by local application. Eight patients were treated by local application alone and two patients received the drug by mouth. Twenty-eight patients were hospitalized while four were treated as out-patients. All of the patients were seen at least once a week by us. All of our patients treated were adult males. Nine patients were treated for pyoderma; eight were treated for eczema, infected; six for folliculitis; three for epidermophytosis, infected; two for cellulitis; three for psoriasis and one for acne conglobata.

Results of Treatment

Table I illustrates the various dermatoses treated with the method of administration of the drug. The results of treatment were classified as excellent when striking improvement was noted within a few days to a week; good results indicate progressive improvement which occurred within a week to two weeks. In both these catagories relapses were not noted. Partial improvement indicates improvement while the patient was undergoing treatment with the drug but relapses occurred when the medication was discontinued. In these cases re-treatment was carried out with signs of improvement and it was often necessary to administer a maintenance dose of 200 mg., daily for various periods of time to such patients. When further improvement failed to occur, the drug was discontinued, usually after a month's trial. No improvement refers to cases which were not benefited after a month's trial on the drug.

Definite Value

This antibiotic was of definite value in those dermatoses in which pyogenic organisms were the causative agent such as cellulitis and pyoderma. It definitely controlled secondary pyogenic infection in cases of infected eczema, epidermophytosis and folliculitis. However, we noted that in these cases associated with secondary pyogenic infection, the underlying dermatosis itself was not benefited by the antibiotic after the secondary pyogenic infection was eliminated. We failed to notice any improvement in our psoriasis patients.

Side-Effects During Oral Administration

None of our patients complained of gastro-intestinal symptoms such as nausea, vomiting or diarrhoea. One patient who was previously treated with a broad-spectrum antibiotic, which caused gastro-intestinal upsets, tolerated 'Ilotycin' well after the broad-spectrum antibiotic was discontinued and 'Ilotycin' substituted for it. No harmful effect from the drug was noted on the blood picture or kidneys. We did not notice any development of monilia infections in any of our patients. The use of 'Ilotycin' is not likely to cause a drastic change in the intestinal flora and

From the Veterans Administration Hospital, Tucson, Arizona.

* Dr. Kenneth C. Baker is Consultant Dermatologist at the Veterans Administration Hospital, Tucson, Arizona. The material used in this study was supplied by Eli Lilly and Company, Indianapolis, Indiana.

** A product of Eli Lilly and Company.

Figure 1. *Case 1, infected dermatophytosis, with secondary cellulitis, before treatment.*

Figure 2. *Another view of Case 1 before treatment.*

Figure 3. *Case 1 after one week of treatment, consisting of local application of 'Ilotycin'* ointment and systemic administration of 800 mg. of the drug daily.*

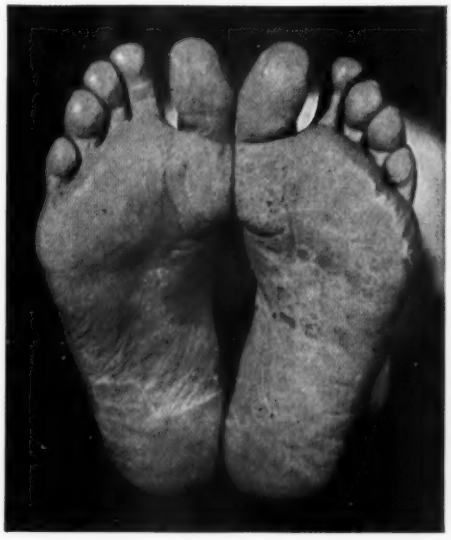


Figure 4. *View similar to Figure 2, after one week of treatment.*

*'Ilotycin' (Erythromycin, Lilly)

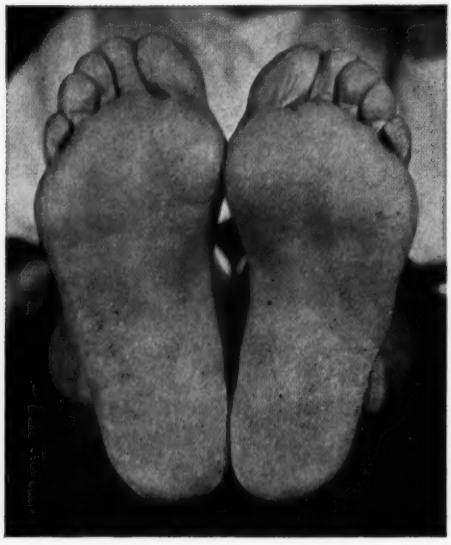


Figure 5. *Case 1 after two weeks of treatment.*

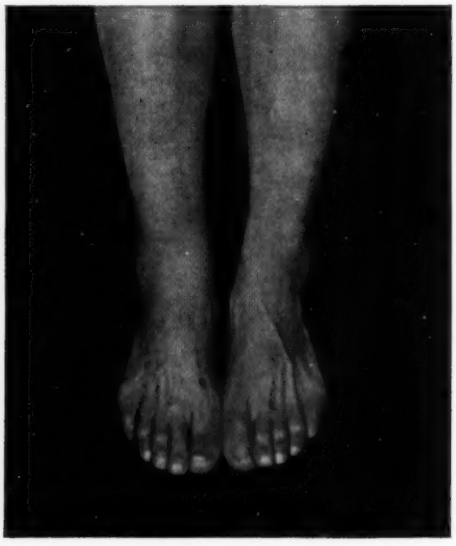
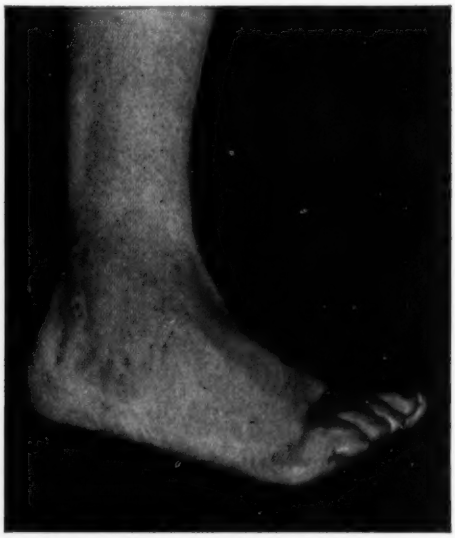


Figure 6. *View similar to Figure 2, after two weeks of treatment.*

Figure 7. *Case 2, infected eczema, before treatment.*

Figure 8. *Case 2 after one week of treatment, consisting of local application of 'Ilotycin' ointment and systemic administration of 800 mg. of the drug daily.*



it does not seem to produce the enteritis which may be associated with administration of broad-spectrum antibiotics. Neither does it appear to produce an overgrowth of non-susceptible organisms, particularly monilia. We feel that since gastro-intestinal symptoms and development of monilia infections are not likely to occur during 'Ilotycin' therapy, patients can be treated with this drug for a longer period of time, if necessary, and they will be less apt to discontinue therapy when annoying or potentially serious side-effects can be eliminated.

Side-Effects During Local Application

We failed to notice any signs of local irritation to the ointment used. One patient complained of itching but examination failed to reveal signs of contact dermatitis in this patient which could be attributed to the ointment. This patient continued using the ointment but did not complain of any further itching.

Report of Some Cases

Case 1. J. S. W., a 36 year old white male, was admitted to the Veterans Administration Hospital, Tucson, Arizona, on March 3, 1954, for treatment of infected dermatophytosis and cellulitis of the legs.

He also had a dermatophytid and/or bacterid involving the hands and lower abdomen. The duration of the present attack was one week although he stated that he suffered from dermatophytosis with repeated flare-ups for five years on and off. Figures 1 and 2 illustrate his condition on admission.

He was started on 'Ilotycin' tablets 200 mg., four times a day. Ilotycin' ointment was applied locally to the denuded areas. Striking improvement resulted within four days and figures 3 and 4 show his condition one week later.

'Ilotycin' Reduced

The dose of 'Ilotycin' was reduced to 200 mg., twice a day at the end of the first week. Figures 5 and 6 illustrate his condition at the end of two weeks of treatment. A striking feature was the prompt improvement in the "id" lesions on the hands and abdomen. Often these are most resistant to therapy.

'Ilotycin' was discontinued at this time and patient was discharged from the hospital. He was observed in the Out-Patient Department and no flare-ups were noted during a few months follow-up observation period.

Case 2. A. G., a 36 year old white male, was admitted on December 6, 1954, for treatment of infected eczema of two weeks duration. The patient stated that he suffered from eczema for the past eleven years which involved various parts of the body. At the time of admission he presented infected eczematized areas involving the outer aspect of the right ankle and over the right knee.

Cellulitis was present over the right ankle region. Scattered patches of eczema were present over the lower back and groins. Figure 7 illustrates the condition of the right ankle at the time of admission. Treatment consisted of 'Ilotycin' tablets 200 mg., four times a day and the ointment was applied locally twice a day to the infected lesions.

Marked Improvement

Marked improvement was seen by the end of the first week, in that the secondary pyogenic infection was eliminated. However, the underlying eczema involving the other areas on the trunk was not benefited by the drug.

Figure 8 demonstrates the condition one week following the start of treatment. The dose of the drug was reduced to 200 mg., three times a day at the end of the first week.

At the end of the second week the drug was given in a dose of 200 mg., daily and this dose was continued for one week after which time the patient was discharged. A flare-up occurred two weeks after discharge and this was controlled by 200 mg., of the drug daily for one week.

Comment

In reviewing the literature, there exists a difference of opinion as to the increased incidence of monilial eruptions following antibiotic therapy. Waisman[1] believes that a distinct and unequivocal increase in monilial eruptions were seen as a complication of treatment with broad-spectrum antibiotics such as chlortetracycline (Aureomycin), oxytetracycline (Terramycin), tetracycline (Achromycin, Tetracyn) and chloramphenicol (Chloromycetin).

It is believed by Zimmerman,[2] Harris,[3] Woods,[4] Brown et al,[5] Livingwood and Mullins,[6] that the clinical manifestations of moniliasis which occur complicating antibiotic therapy are due to the destruction of the normal flora of the body, thereby removing the inhibiting effect of these organisms which compete with the co-existing C.albicans for nutritive substances in the same substrate.

No Monilial Eruptions

Since 'Ilotycin' is not likely to bring about a drastic change in the intestinal flora, monilial eruptions are not apt to occur during the administration of this drug. We did not observe any occurrence of monilial infections in our series nor did we notice gastro-intestinal upsets in our patients.

Kligman[7] does not feel that there is convincing evidence to believe that antibiotics really stimulate the growth of fungi.

Robinson[8] also believes that laboratory studies indicate that the antibiotics do not stimulate or retard the growth of C.albicans.

Leitner[9] feels that alteration in vitamin biosynthesis may be a factor in lowering the resistance to the Candida, and he claims success in the prevention and treatment of monilial infections by the administration of vitamin B complex concurrently with the antibiotic drug.

Summary and Conclusions

Thirty-two patients were treated with 'Ilotycin' (Erythromycin) for various dermatoses, 22 patients

(Continued on Page 114)

Cancer of the Breast*

By J. Leighton Green, M. D., F. A. C. S., El Paso

Cancer of the breast is one of the unsolved problems of the medical profession. We must admit that we do not know the cause or the cure of this widely-prevalent disease. Adair has expressed the doubt that the average woman with early cancer of the breast has any better chance of cure today than she had 60 years ago.

Proof that present methods of treatment are unsatisfactory is found in the fact that one group of surgeons advocates much more radical surgery than the accepted methods, while another group advocates more conservative treatment.

Incidence

Breast cancer in American women has the highest incidence of any form of neoplastic disease in either sex. It is estimated that there are at one time over 50,000 cases in the U. S. This disease — or group of diseases — is the most common cause of cancer death in women.

It is the leading cause of death for women between the ages of 40 and 60 years. In 1901 the mortality rate of breast cancer per 100,000 women has 10.9. In 1948, that rate had increased to 26.9. During 1948, 18,938 women died from this disease, highest mortality up to that time.

The peak age incidence is 45 to 49. Breast cancer is a disease of middle age.

Etiology

The etiology of mammary cancer remains unknown. Many factors have been thought to contribute to the onset of the disease. Notable are singleness, infertility, failure to nurse babies, trauma, infection, late menopause, and use of hormones. Careful investigation of series of cases does not bear out such impressions.

Trauma probably serves only to accelerate already-existing disease. Clinical use of estrogens have been condemned because of the alleged carcinogenic tendency of these hormones, but estrogen have never been proved to cause cancer in the human breast.

Chronic Cystic Mastitis

Chronic cystic mastitis, or fibrocystic disease, may provide proliferative lesions which become precancerous, but this is open to dispute.

Warren found 35 cases of carcinoma of the breast in 1044 cases of chronic cystic mastitis and chronic mastitis. He calculated this to be 4.5 times as great an incidence of breast cancer as for women in general.

250 Cases

Lewis and Ceschickter, on the other hand, followed 250 cases of chronic cystic mastitis for five years or more and found the deaths from carcinoma of the breast to be 0.4 per cent. They concluded that chronic cystic mastitis is not a precancerous disease. Adair followed 400 patients with cystic mastitis for some years and operated on only three of them for carcinoma. Something in the mother's milk is said to have a bearing on later development of cancer, perhaps, a virus.

There seems to be a familial tendency to cancer in some families. Examination of such families has found every patient to show hyperestrogenism.

Pathology

A typical cancer begins in the breast gland and spreads laterally to axillary lymphatic nodes. However, Handley studied biopsied nodes of the internal mammary chain and found that 34 per cent of breast lesions had metastasized to the internal mammary nodes.

Of 48 patients with cancer in the inner half of the breast, 60 per cent had metastases in internal mammary nodes. In 81 patients having axillary metastases, 48 per cent had internal mammary deposits. Orrahood showed that in breast cancer the incidence of metastases in internal mammary and supraclavicular nodes may be greater than 60 per cent.

Radical Mastectomy

Obviously, the Halstead radical mastectomy can be successful in only the remaining 40 per cent of cases, or less.

H. T. Randel (of Memorial Hospital, New York) reports four years' experience with internal mammary node dissection. He says that 60 per cent of cancer of the internal half of the breast involves internal mammary nodes. It should not be forgotten, also, that cancer of the breast may metastasize via the blood stream.

Great Responsibility

The pathologist has a great responsibility. Upon the pathologist's report hangs the surgeon's decision for or against a radical operation. The pathologist's examination of excised axillary nodes determines whether post-operative irradiation shall be given.

Ackerman and Regato report instances in which only one node in 25 or 30 was found malignant. It is obviously necessary to examine many nodes to determine whether metastases are present. Statistics on axillary metastases and therefore reports on surgical results hinge on such examinations.

Symptoms and Clinical Course

There are very few early symptoms of carcinoma of the breast. Usually a painless lump is discovered by the patient or by her physician during examination. A sensation of heaviness in the breast may be the patient's complaint.

*Presented Dec. 11, 1955 at University of Texas Postgraduate School of Medicine, El Paso.

There may be some thickening of a portion of the breast. Infrequently, a large mass in the axilla may be the first sign noticed. Backache, due to metastases to vertebrae, is of course a symptom of advanced carcinoma.

Growth Variable

Growth of tumors is variable, some enlarging rapidly, some requiring several years to reach any appreciable size. With increase in size of the tumor, skin involvement occurs, with edema and local pain. Satellite skin nodes may then develop about the tumor.

Enlarging axillary nodes may become fixed and may cause swelling of the arm. Allowed to progress, the tumor may ulcerate and become infected, or erode a blood vessel and bleed copiously.

Advanced Signs

Secondary anemia and weight loss are signs of advanced disease.

What is most important is to eradicate the cancer while it is still a small nodule localized in the breast. Harrington has shown from statistics compiled at the Mayo Clinic that when axillary nodes have been invaded prognosis is far worse than when the axilla is free of the disease.

Diagnosis Difficult

Diagnosis of the early lesion is often quite difficult. A good history is important — family history, history of pregnancy and lactation, nipple discharge, breast injuries, premenstrual breast swelling or pain, when the tumor was discovered, when a physician was first consulted, loss of weight, previous treatments — all are important information.

Diagnosis depends on a high index of suspicion and a careful examination. There must be a strict, painstaking routine in which all four quadrants and the subareolar area of each breast are meticulously surveyed by inspection and palpation.

Nipple Examination

The nipple should be examined for discharge, inversion, or lack of mobility. Bleeding from a nipple in the presence of a breast tumor usually means cancer.

Any tumor should be checked as to size, consistency, mobility, and attachment to skin. Both axillea should be examined. If axillary nodes are found, they should be noted as to size, fixation, and consistency.

Sitting Examination

The patient should be first examined in the sitting posture, in a good light. Have her lean forward with arms outstretched and chin held up. Dimpling may appear over a breast lesion. Have her sit up and elevate her arms above her head. Have her place hands akimbo and press inward.

If a region of the breast is suspected, stretch the skin over this area with thumb and forefinger, to induce possible dimpling.

Have the patient lie down. Place a small pillow under one shoulder, thus flattening the breast on the chest wall. Palpate each quadrant. Palpate the nipple, then the axilla.

Large, Hard Node

A large, hard node in the axilla is most often carcinoma. Small nodes are often missed. Examine the other breast in similar manner.

Palpate supraclavicular and cervical lymph node areas. General physical examination is of course mandatory, with emphasis on pelvic and rectal examinations for concomitant gynecologic lesions.

Transillumination of the breast may help in diagnosis, but only to differentiate a cystic from a solid tumor. Any three-dimensional mass in a breast should be considered malignant until biopsied and proved benign.

Echograph Exhibited

At the Clinical Congress of the American College of Surgeons in Chicago in November, 1955, an echograph was exhibited, an instrument for diagnosing breast cancer by supersonic sound waves.

This instrument charts a graph dependent on the density of the tissue surveyed. Perhaps such gadgets may in time prove indispensable, but most of us must now depend on tactile and visual sense. In about 80 per cent of breast cancer cases, a lump is the first symptom.

River and Silverstein found that of 590 women who came to their clinic complaining of a lump in the breast, 35 per cent had malignancy.

Skin Retraction

Skin retraction is detected in perhaps one-half of the cases with cancer. Most common site of cancer is the upper and outer quadrant of the breast.

X-ray has been used in diagnosis of breast tumors, but this method has not been widely accepted. Discharge from a nipple, particularly if bloody, calls for smears and cytological examination. The careful pathologist may detect cancer cells in the smear. Aspiration biopsy is not favored by most authorities.

Sometimes Wrong

The most experienced surgeon may be wrong in 25 per cent to 30 per cent of cases on clinical examination. Excision of the tumor and microscopic examination is the only accurate means of diagnosis. Recent educational campaigns have succeeded in bringing women to the doctor earlier for examination.

Wevill found that in 1932, 14 months elapsed between onset of symptoms and beginning of treatment in the average patient, whereas in 1955 this period of waiting had been reduced to 8.2 months.

It is estimated that 98 per cent of breast tumors are first discovered by the patient. Nowadays, the woman who discovers a lump will run to the doctor. A great responsibility rests on the doctor who first examines the patient.

Treatment

Successful treatment of cancer of the breast can be accomplished best by radical mastectomy. In general, the criteria of operability have been:

1. Movable primary tumor.
2. Limitation of the metastases to the axilla of the side as the primary tumor (checked by roentgenograms of chest and skeleton).
3. Movable metastases.

Haagensen and Stout, after review of the patients who had undergone mastectomy for cancer of the breast at Presbyterian Hospital, New York, decided that the operation was not justifiable under the following conditions:

1. When the carcinoma is of the inflammatory type.
2. When there is extensive edema of the breast.
3. When satellite nodules have appeared in the skin of the breast.
4. When there is already edema of the arm.
5. When intercostal or parasternal nodes are involved.
6. When supraclavicular nodes are involved.
7. When distant metastases have occurred.
8. During pregnancy or lactation.

The last-named contraindication has been much disputed.

Technique Unsurpassed

In 1894 Halstead advocated radical mastectomy for cancer of the breast, and his technique has remained unsurpassed. Every radical operation should be preceded by biopsy and quick section.

This diagnostic procedure is favored for a case with bleeding nipple, as well as for the patient with a definite nodule. Where previously mastectomy was done for bleeding nipple, it is now contended that simple mastectomy is too radical for a benign lesion and not radical enough for a malignant one.

Cancer Found

Having biopsied the breast and found cancer, the surgeon and his assistants should change gowns and gloves, prepare the field again, and change instruments before proceeding with the radical operation. Recurrences in the wound have often been due to neglecting this careful technique.

Various modifications of incisions have been recommended, notably by Rodman, Orr, and McAfee. Incisions which extend into the axilla or onto the arm have been largely abandoned.

It is generally accepted that the incision should extend three or four centimeters beyond the tumor on all sides, but Wangensteen says that it is not necessary to sacrifice so much skin.

Closing The Wound

Closing the wound without skin graft is possible in most cases, a more simple problem in fat patients than in thin ones. Subcutaneous fat and fascia should be removed from the skin flaps medially to the sternum, upward to the clavicle, laterally to the latissimus dorsi muscle, and inferiorly to the sheath of the rectus abdominis.

The sternal portion of the pectoralis major muscle and all of the pectoralis minor should be removed en bloc with the axillary nodes.

Two Improvements

In closing the wound, two improvements in technique are recommended: (1) Suture the skin into the axilla with several sutures, thus eliminating dead space, and (2) drain the axilla and the lower portion of the chest wound with catheters attached to suction, to prevent accumulation of serum. Such accumulations invite infection and edema of the arm.

Operation Extended

Halstead advocated dissection of supraclavicular nodes, but this has been abandoned by most operators. Gordon-Taylor in 1948 extended the operation to include removal of anterior mediastinal nodes and internal mammary vessels, after resecting the second and third costal cartilages.

Wangensteen has adopted mediastinal dissestion as routine procedure with radical mastectomy.

Urban removes a portion of the sternum with parts of the upper four ribs, closing the chest wall defect with a fascia lata graft. Wide adoption of such radical procedures will undoubtedly increase mortality and morbidity, and their value remains to be proved.

Opinion Expressed

H. W. Meyer recently expressed the opinion that internal mammary node dissection should be done only at research institutions until its value has been definitely determined. There are many who feel that involvement of the internal mammary nodes should justify declaring the cause inoperable.

It seems probable that if cancer has extended into the chest it has extended further and is beyond surgical extirpation. We know that this is true too often in the presence of axillary metastases.

Other Extreme

At the other extreme regarding breast surgery stands McWhirter, of Edinburgh. He advises simple mastectomy and post-operative irradiation of the axilla as a method of treatment superior to radical mastectomy. He reports 56 per cent of 5-year cures in "operable" cases. Cade, of London, feels that McWhirter's work is a return to pre-Halstead days.

He points out that simple mastectomy is just as mutilating an operation for the woman as is radical mastectomy. He says that irradiation will not destroy all the cancer cells in the axillary nodes.

Records Reviewed

Ackerman reviewed records and microscopic slides for 719 consecutive patients treated by McWhirter, all with presumed cancer of the breast.

He found that: (1) A few had intraductal papillomas, not malignant. (2) At least 220 patients had received ovarian sterilization after mastectomy. (3) Others had excision of involved nodes, stilbestrol therapy, or testosterone.

(4) The incidence of local persistence of cancer in the operable group was higher than in properly-selected operable cases.

Irradiation

(5) Irradiation did not kill all the cancer in involved nodes. (6) There was considerable morbidity from McWhirter's irradiation, even necessitating amputation of the arm in three patients. Ackerman concluded that McWhirter's method was not superior to the well-planned radical mastectomy for the patient with operable breast cancer.

Valuable Adjunct

Irradiation therapy is a valuable adjunct in treatment. Preoperative irradiation has been generally discarded, but post-operative X-ray therapy is advised where axillary metastases are found at operation.

Such treatment follows the findings of Harrington at the Mayo Clinic, that longevity was increased for those patients with axillary metastases who had post-operative irradiation. Orr reported a similar procedure as favored at the University of Kansas, and the practice is widespread.

Inoperable Cases

Inoperable cases should have irradiation as palliative treatment. Pain is relieved, especially where bone metastases are present. The patient is improved in general health, and life is prolonged.

Meland, at the Los Angeles Tumor Institute, treated 176 cases of cancer of the breast with irradiation alone. His 5-year survivals were 69 per cent for Group I cases, 22 per cent for Group II, and 13 per cent for Group III.

Oophorectomy

Oophorectomy for cancer of the breast was first practiced by G. T. Beatson, in Glasgow, in 1891. Its field of usefulness seems to be in premenopausal women, where it is helpful in 22 to 25 per cent. Oophorectomy should not be done at the same time as mastectomy, but later. Irradiation of the ovaries may accomplish something toward eliminating ovarian hormones, but is less efficient than removing the ovaries.

Ackerman and Regato favor such irradiation in young women with bone metastases. Schonbauer and Schmidt-Ueberreiter followed 205 patients after mastectomy, found that of 104 deceased patients, 85 had had functioning ovaries, while of 107 surviving, the ovaries were active in only 16.

Adrenalectomy and Oophorectomy

Adrenalectomy and oophorectomy combined have been tried for advanced breast cancer. Galante et al performed this operation on 31 women. Some had metastases to bone, soft tissues, or both. Desoxycorticosterone with cortisone acetate was used for substitutional therapy. Of 19 surviving patients, mean survival after operation was 10½ months.

Objective improvement was seen in 22 per cent, but 45 per cent had subjective benefit. Pyrah and Smiddy did bilateral adrenalectomy and bilateral oophorectomy in 22 advanced cases, with improvement in 10. Treves says that castration should be performed at least six weeks before adrenalectomy.

Mortality High

Mortality is high — Huggins reported 7.8 per cent mortality within 30 days in 115 cases of widespread cancer. It is evident, however, that the combined operation can produce a major remission in some patients with advanced metastatic mammary cancer.

It is most successful where the breast lesion is adenocarcinoma. Randall, of Memorial Hospital, New York, reports remissions of breast cancer after nine months were 44 per cent after oophorectomy, 45 per cent after adrenalectomy, and 65 per cent after combined oophorectomy and adrenalectomy.

Testesterone Proprionate

Since Loeser's pioneer work in 1937, testesterone proprionate has been widely used. Bone metastases respond particularly well to the male hormone, with relief of pain. An effective dose is 50 mg. three times weekly. Treatment should be continued three months before deciding it is ineffective. Loeser now reports better results by using thyroid and testosterone together.

His latest contribution is reporting that large doses of thyroid prevent recurrences of cancer. Androgens may be used in women under 60 in whom cancer in the soft tissues cannot be checked by irradiation. Prudente, of Brazil, in 1945 used testosterone proprionate in doses of 25 to 175 mg. per week after radical mastectomy.

Good Results

He reported the results were 100 per cent better than after operation alone. One hormone may prove successful in palliation, later may become ineffectual. Cessation of therapy or change to an antagonistic hormone may then be of help.

Thus one may on occasion shift from androgen to estrogen, with satisfactory results. Randall says that estrogen should be used only after the patient is ten years past the menopause.

The author agrees with Huggins, who believes that when satisfactory elucidation of the cancer problem has been achieved the hormones will be found to occupy a position near the center of the problem.

Estrogens and Androgens

English radiotherapists first used estrogens and androgens and showed that these hormones have an important role in cancer of the breast. In 1944, reports of results in 100 patients revealed that in those under 60 years of age, 15 per cent were improved, while in those older than 60, improvement was seen in 47 per cent.

Nathan and Adair showed striking benefit in older women when large doses of estrogens were used. Inoperable and ulcerating lesions of the breast actually healed and regressed in size.

Subjective improvement results in many patients who show no objective relief. They feel better, have better appetite, increase their activity, and are relieved of much of their pain.

Objective Benefit

Lemon, of Boston University, reports about 50 per cent of a small group of oophorectomized premenopausal patients shows objective benefit when given cortisone and hydrocortone. He used an initial dose of 200 mg. daily, followed by a maintenance dose of 100 mg. Vitamin B12 and potassium chloride were administered with the cortisone. Other reports find cortisone ineffective in breast cancer.

Results

Since we cannot accurately estimate host resistance and cannot rule out metastases, we can give no accurate prognosis in any given case of cancer of the breast. However, it is possible statistically to predict the average survival in a series of cases. Daland found that the average duration of life for 100 consecutively *untreated* patients with breast cancer was 3.4 years. 40 per cent were alive after three years, 22 per cent after five years, nine per cent after seven years, and five per cent after 10 years. Our methods of treatment must do better than this or they are worthless.

Figures Cited

The following figures will demonstrate that radical mastectomy is worthwhile. These are figures of survivals following radical mastectomy:

		Over-all survival	Breast aone involved	Breast and axilla involved
Adair, Memorial Hosp.	5 Yr. survival	54.4	77.5	39.4
	10 Yr. "	33.8	53.8	21.2
Harrington, Mayo Clin.	5 Yr. "	51.2	78.3	32.5
	10 Yr. "	31.1	54.5	15.5
Guthrie, Guthrie Clin.	5 Yr. "	52.0	76.0	46.0
	10 Yr.	—	40.9	9.8
Rosenquist, Karolinski Hospital, Sweden.	5 Yr. "	54.4	70.9	42.5
Lahey Clinic	5 Yr. "	52.0	75.0	37.0

These figures show that a woman with cancer of the breast has a 75 per cent chance of living five years after radical mastectomy if the breast alone is involved, but only about 35 per cent chance if the axilla is involved. Similar figures were reported by Haagenson and Stout, who reviewed 495 radical mastectomy cases at the Presbyterian Hospital, New York. They found 48.7 per cent alive after five years. Harrington's latest figures, for the years 1940 to 1944, showed some improvement, with 85.6 per cent surviving five years.

Shimkin, at the University of California, reported results according to stages. In Stage I (carcinoma localized to the breast) 77.3 per cent of 225 cases were alive five years after radical mastectomy. But of 87 cases in Stage III (with skin involvement, extensive axillary metastasis), only 16.4 per cent survived five years. Such figures emphasize the importance of early treatment.

Summary and Conclusions

1. Carcinoma of the breast is a deadly disease, etiology unknown, often slow in onset, difficult to detect in the early stage.
2. Every suspicious breast lump should be biopsied to rule out malignancy.
3. Radical mastectomy is the treatment of choice for breast cancer. Irradiation is a useful supplement to surgery, and for palliation hormones or irradiation are useful. Oophorectomy or adrenalectomy, often combined, contribute to remissions in some cases.
4. Approximately 75 per cent to 85 per cent of women with breast cancer can be saved for five years or more if subjected to operation before axillary involvement occurs. After metastasis to axillary nodes has occurred, the salvage rate drops to about 35 per cent.

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Texas Orthopaedic Association to Meet in Galveston April 23

Annual meeting of the Texas Orthopaedic Association will be held in Galveston, Texas, April 23 in connection with the annual convention of the Texas Medical Association in Galveston, April 22 through 25.

Ob-Gyn District 8 to Meet April 9-11 in Tucson

Annual meeting of District 8 of the American Academy of Obstetrics and Gynecology will be held in Tucson from April 9th through the 11th, with headquarters in the Pioneer Hotel.

District 8 includes the 11 western states: British Columbia, Saskatchewan and Alberta in Canada; and Alaska and Hawaii. Dr. H. S. Rhu, Jr., of Tucson is in charge of plans for the meeting.

Clinical Notes From Grand Rounds

These notes are abstracts of opinions expressed by staff members during case presentations at the Friday Grand Rounds of the Pratt Diagnostic Clinic — New England Center Hospital.

Porphyria may be congenital or acquired. The acquired types may be associated with lead intoxication or the administration of sulfonal or the barbiturates. It is occasionally seen in pregnancy and in association with liver disease.

The Role of Histoplasmosis in Colonic Disease*

By Donald C. Collins, M. D., M. S. (Path. & Surg.), Sc. D., F. A. C. S., F. I. C. S., F. A. C. G., F. A. C. C., F. I. A. P., Assistant Professor of Surgery, College of Medical Evangelists, Los Angeles.

There is a relatively new disease of the colon that all should become familiar with immediately. Fifty years ago, Darling[7] first recognized this new pathologic entity at The Ancon Hospital after a three years' study of 33,000 patient admissions. Three fatal instances were recorded in two negroid and one chinese resident of Panama. The specific organism was mistakenly identified as being a protozoa and was thus called Histoplasma capsulatum.

In the early years of this century, sporadic case-reports appeared in the literature, always describing fatal results. This same organism was earlier described in 1885 by Flemming[9] as "tingible Korpern." Tokishige[22] in 1896 mistook this disease for Blastomycosis. As late as 1921, Latta[14] referred to these specific organisms as being degenerative lymphocytic nuclei.

In 1934, de Monbreun[17] proved the true fungus origin of Histoplasmosis by successfully growing the Histoplasma capsulatum from both the blood stream and the spleen of a six month old infant, who died twelve days following hospital admission. The life cycle of this organism can only be completed by passing the mycelial form through animals, such as the dog, horse, cow, etc.

First Recorded Instance

Riley and Watson[21] in 1926 described the first recorded instance of American Histoplasmosis occurring in a human in Minnesota. Meleney[16] in 1940 added thirteen new unpublished case-reports of this disease to the literature and classed this infection as being: "Reticuloendothelial Cytomycosis." In 1941, Conant[5] presented extensive cultural studies of this organism and completed its life cycle by employing blood agar slants sealed with paraffin. He classified this disease as a fungus in the group of Monoiliaceae of the fungi imperfecti.

In 1943, the important fact was presented by Long and Stearns[15] that Histoplasmosis could exist in a benign, very mild, non-fatal form. They formed these important conclusions after studying 53,400 chest x-ray films of inductees during the early years of World War II. Brief descriptions of Histoplasmosis first appeared in text-books on tropical diseases and clinical mycology in 1944 and 1945.

In 1948, Furcolow, Bunnel and Tenenberg[10] presented a reliable diagnostic complement fixation test for human Histoplasmosis. During this same year, Rawson[20] discovered that the Histoplasma capsulatum possessed a diagnostic acid-fast property similar to Myobacterium tuberculosis.

2,135 Appendices

In 1950, Raftery, Trafas and McClure[18] studied

Plate 1

Histoplasma capsulatum organisms in the cytoplasm of a reticuloendothelial cell of a submucosal lymph node of the left colon. Gross pathological diagnosis: — "Chronic ulcerative colitis." x 1300.

2,135 appendices and reported that on an average five per cent of all types of appendicitis reveal the presence of the Histoplasma capsulatum in the "germinal centers" of the submucosal lymph nodes. However, in thirty instances of proven mesenteric lymphadenitis, thirteen (43 per cent) of the appendices demonstrated the presence of the specific organism.

The next year, Raftery[19] reviewed 436 examples of "chronic appendicitis," lymphoidhyperplasia and normal appendices collected during the preceding decade from children less than sixteen years of age admitted to The Henry Ford Hospital of Detroit. Ten per cent of those reexamined appendices were found to contain the Histoplasma capsulatum. Also, there was found to be an associated high incidence of lymphoblastoma with Histoplasmosis.

Five Years Ago

It was only five years ago that Conant[6] and Iams[13] independently concluded that this disease exists endemically in the United States in two widely different forms, namely: one, highly fatal, and the second, primarily benign, where in the latter instance the vast majority of patients get well without specific

*Delivered before the International Academy of Proctology, Phoenix, in connection with the 1955 Annual Meeting of the Southwestern Medical Association.

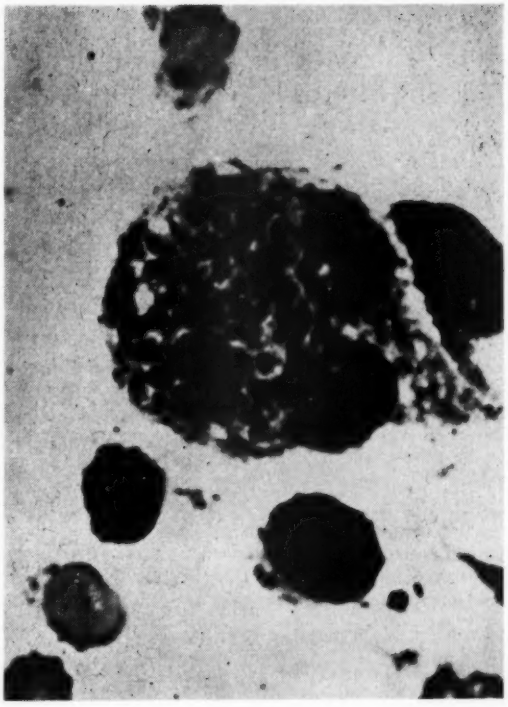

Plate 2

Mononuclear cell containing many Histoplasma capsulatum organisms in its cytoplasm. From "germinal center" of submucosal lymph node in transverse colon. Gross pathologic diagnosis: — Adeno-carcinoma, Grade iii with metastases. x 1300.

therapy and without active continuance of their illness.

Up to 1949, Cariker[1] stated that only 123 human instances of Histoplasmosis had been recorded in the literature. Histoplasmin skin tests were eighty-four times more common in the humid areas of Kansas when compared to the arid regions of that state.[11]

In 1952, the Hotchkiss — McManus modification of the Schiff's periodic acid stain was first presented. Today, this excellent staining technic gives the investigator a highly reliable and fast screening method of positively identifying the Histoplasma capsulatum in the cytoplasm of infected cells. Furcolow and Larsh,[12] among numerous investigators, have warned that a highly infectious type of broncho-pneumonia, due to the Histoplasma capsulatum, can follow the inhalation of dust from soils contaminated by this fungus.

"Camp Gruber (Oklahoma) pneumonitis" or "cave-sickness" is caused by this specific organism. In 1953, Farrell, Cole, Prior and Saslow[8] demonstrated that they could only reproduce this disease with fatal results in dogs by the intratracheal innoculation of the yeast-phase of the organism. Innoculation of the Histoplasma capsulatum by stomach tube was a failure and all the dogs survived free from the disease.

Endemic Area

This year, Zeidberg, Ajello and Webster,[24] writing from Williamson County, Tennessee, an endemic area, found that soils "positive" for Histoplasma capsulatum had a higher acidity than "negative" soils. In September of this year, White[23] was able to report his experiences with 229 patients having mild pulmonic Histoplasmosis. All of these patients had positive histoplasmin skin-tests and had been followed in a tuberculosis chest clinic for observation periods varying from five to twenty years.

No patient had died from this disease. He believed that this disease was most commonly encountered among farmers and other rural residents exposed to contaminated soils. It is noteworthy that benign pulmonary Histoplasmosis was not generally recognized as a specific disease entity until mass roentgenographic and tuberculosis-testing surveys were applied to "healthy" population groups.

151 Instances

This year, I[3] presented a study of 151 instances of surgically proven juvenile mesenteric lymphadenitis. Seventy-eight (52.6 per cent) were positive histologically for Histoplasmosis. In addition over 64.8 per cent of 123 appendices surgically removed during the past decade for this disease exhibited positive histoplasmin skin-tests, while over 12.8 per cent demonstrated positive specific complement fixation tests.

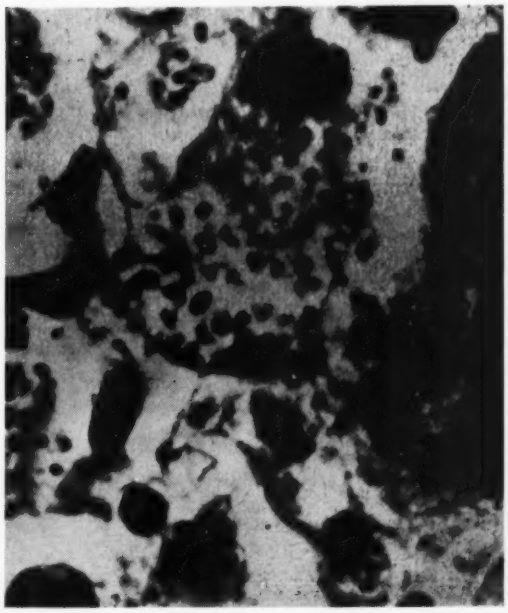

Plate 3

Numerous Histoplasma capsulatum organisms in a right colon submucosal lymph node macrophage. Gross pathologic diagnosis: — "Chronic ulcerative colitis." x 1300.

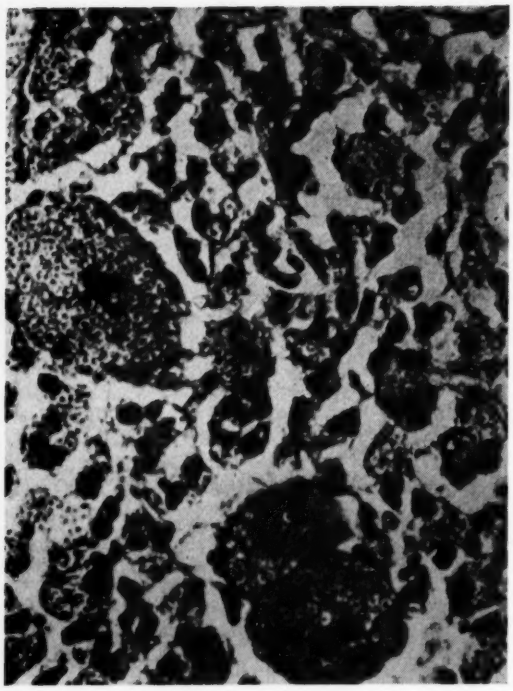

Plate 4

Histoplasma capsulatum organisms filling the cytoplasm of two large macrophages and smaller lymphocytes and reticuloendothelial cells of a "germinal center" of a regional lymph node near the sigmoid flexure of the colon. Gross pathological diagnosis: — "Chronic ulcerative colitis." x 840.

Of twenty-four patients previously reported in 1936 by the Author,[2] a further follow-up study revealed that 62.5 per cent had positive histoplasmin skin-tests, and 83.3 per cent revealed the typical calcified bilateral hilar and parenchymal nodes of healed or healing Histoplasmosis. In October of this year, the Author[4] reported the final end results of a thirty-four years' continuous study of the vermiform appendix, comprising of 50,000 specimens. In 3,905 instances (7.81 per cent) in this large series, there was definite and characteristic evidence of the presence of the Histoplasma capsulatum.

None of these 3,905 patients died from Histoplasmosis, attesting to the benign form of this fungus infection that has become endemic in the United States.

Present Status

At the present time it is commonly agreed that Histoplasma capsulatum has a world wide distribution. This disease is endemic in the following areas of the United States: — the Mississippi River Valley, the slopes of the Appalachian Mountains, Minnesota, Florida and the Pacific Coast line. This disease can exist in a mild and benign form commonly seen in children and adolescents.

Peculiarly, this illness is characterized by a diffuse mycosis of the cytoplasm of the various cells that comprise the human reticuloendothelial system. Histoplasmosis in the young is characterized by fever, gastroenteritis, leucopenia, diffuse and extensive lymphadenitis of commonly the gastrointestinal tract and a brief hepatosplenomegaly.

Laboratory Identification

This fungus is classed as being one of the Moniliaceae of the fungi imperfecti (septate mycelia), having no sexual spores. This organism is very closely related to both the Blastomycosis Dermatitidis and Blastomyces Brasiliensis, as well as the Sporotrichium Schenckii. Thus, it is not strange for histoplasmin or complement fixation tests for Histoplasmosis to unfortunately give occasional false positive results in the presence of one of the other three closely related organisms.

This fungus is best demonstrated in the tissues by the Hotchkiss — McManus modification of Schiff's periodic acid stain. Less excellent staining technics are provided by the Giemsa, Rawson's[20] modified acid fast stain and hematoxylin and eosin stains.

Reader Referred

Culturally, this organism grows characteristically

Plate 5

Left colon submucosal lymph node showing a "germinal center" in which are clearly seen large macrophages surrounded by a clear halo area, giving the so called "starry sky" appearance. Numerous Histoplasma capsulata are present in the cytoplasm of the macrophages. Gross pathological diagnosis: —"Chronic ulcerative colitis." x 240.

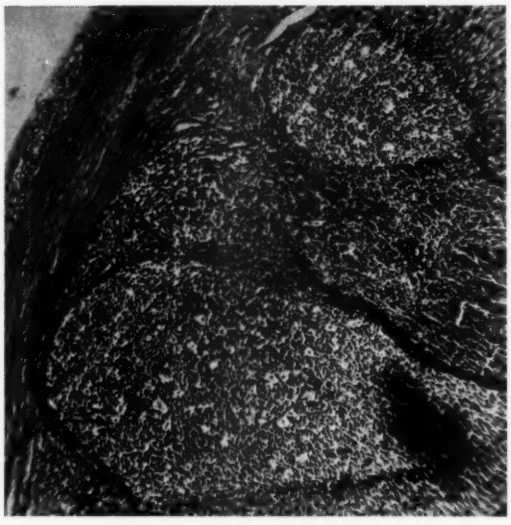

Plate 6

Cecal submucosal lymph node showing two "germinal centers" in which are clearly seen typical "starry sky" phenomena. Numerous Histoplasma capsulata are present in the cytoplasm of the macrophages. Gross pathological diagnosis: —"Non-specific regional enteritis of the terminal ileum and the cecum." x 240.

on both Sabouraud's and Littman's ox-gall media. For further details the reader is referred to a previous article[3] upon this subject that goes into greater details. At 37° C. the organisms are small, round, oval, budding yeast-like cells. Microscopically in tissues the fungus is primarily intercellular and is oviform or round surrounded by a clear, refractile achromatic zone or capsule.

The organism does not stain homogeneously, but very irregularly, rarely do any two organisms look exactly alike. The body consists of a deeply staining eccentric, commonly semilunar shaped nucleus, often situated at one end of the fungus. There are achromatic vacuole spaces, which in the Histoplasma duboisii have been demonstrated to contain fat.

The deeply staining chromatin is usually situated at one end of the body, sometimes consisting of a single mass or several small masses of chromatin. Sometimes it is ringed in shape and occasionally extends along half of the periphery of the body, being crescentic in shape.

Dot or Rod

Occasionally a chromatin dot or rod is seen near the larger chromatin body or it may be at the opposite side or end. The vacuoles are irregularly placed and are of varying size and extent. These small (1 - 5 micra) oval, yeast-like cells are found characteristically in the cytoplasm of macrophages and other reticuloendothelial cells of the bone marrow, lymph nodes, spleen, liver and blood stream. A uniform histologic picture was noted in involved instances, consisting of a marked lymphoid hyperplasia with very prominent lymphoid follicles and broad "germinal centers" containing scattered large diagnosic macrophages giving the pathognomonic "starry — sky"[19] effect of reactive hyperplasia. The organisms appear in the cytoplasm of these large phagocytic and reticuloendothelial cells of the lymph node "germinal centers" in widely varying numbers.

Reasons For This Study

In view of the results obtained by my two[3, 4] previous studies, showing a high incidence of the Histoplasma capsulatum in the appendices of patients with surgically proven juvenile mesenteric lymphadenitis, and an overall incidence of 7.81 per cent in 50,000 appendices studied; it appeared that a restudy of the surgical tissues removed during the performance of colon surgery for varying disease entities might prove of interest and value. This study has been in progress for the past three years. Similar technics as previously described[3] were employed again in this study. For the purposes of brevity, the reader is referred to that earlier contribution for further technical details.

Materials

A review was made of the available tissue saved from all types of surgical procedures performed on the colon (except appendectomies, which have already been adequately studied[4]) in two large hospitals during the past decade in Los Angeles. The same general technic was employed as was described previously in a previous contribution of mine[3] and will not be repeated here. This review has taken over three years to complete.

Results

For purposes of brevity as well as clarity, the results of this three year study are tabulated and summarized in CHART I. It is believed that the data is self explanatory and will need no further elaboration.

Chart I

INCIDENCE OF HISTOPLASMOSIS IN 1,205 PATIENTS WITH SURGICALLY TREATED COLON DISEASES:

COLON — DISEASE:		PROVEN HISTOPLASMOSIS:	
Disease:	Number of Cases:	Number of Cases:	Per Cent of Disease:
Carcinoma.	546	49	8.974
"C. U. C."	179	64	35.754
Diverticulitis.	96	12	12.500
Fistulae.	81	7	8.642
Polyposis.	69	6	9.335
Volvulus.	61	5	8.197
Megacolon.	57	5	8.772
Tuberculosis.	45	6	13.333
Benign Tumors.	38	5	13.158
Actinomycosis.	16	2	12.500
Sarcoma.	9	1	11.111
Miscellaneous.	8	2	25.000
Grand — Totals:	1,205	164	13.610
(Non-Specific Regional Enteritis of Small Intestine.)	219	69	31.507

Discussion

After studying these 1,205 examples of surgical treatment of the various diseases of the colon as well as the additional 219 instances of non-specific regional enteritis of the small intestine, I firmly believe that the "starry – sky"[19] found in the "germinal centers" of the regional and submucosal lymph nodes offers a quick and fairly accurate screening method when searching for a possible Histoplasmosis capsulatum infection of either the small or large intestine.

If this phenomena of reactive hyperplasia is absent, I have had great difficulty in finding the characteristic cytological lesions. Very few lymph nodes exhibiting "starry sky" phenomena failed to promptly demonstrate the intercellular Histoplasma capsulatum. It is the considered belief of this Author that this peculiar tissue reaction observed in the "germinal centers" of the lymph nodes of both the small and large intestine is just as pathognomonic of a Histoplasma capsulatum infection; as the tubercle formation with its multinucleated giants cell is usually characteristic of the presence of Tuberculosis.

Great Increase

The great increase of "positive" slides in instances of various types of "chronic ulcerative colitis" and again in cases of "non-specific regional enteritis" of usually the small intestine, raises the question of whether or not this increased incidence is of real significance.

A milder, though similar disease, juvenile mesenteric lymphadenitis, appears from recent studies[3, 18, 19], to demonstrate a rather marked increase in "positive" histologic tissue sections that possesses mathematical significance.

Possibly in the near future, further investigations will reveal that the Histoplasma capsulatum is the principal etiologic agent in the causation of the somewhat similar diseases of "chronic ulcerative colitis," "non-specific regional enteritis of the small intestine" and juvenile mesenteric lymph adenitis.

Summary

1,205 instances of surgical excision of colon tissues for a variety of diseases in the past decade in two hospitals in Los Angeles have been reviewed for the presence of Histoplasma capsulatum. Similarly, 219 examples of non-specific regional enteritis of the small intestine were similarly studied. This review took more than three years to complete. From previous similar studies on the vermiform appendix[3, 4], it appears fairly well established by these earlier extensive studies that the "starry – sky" phenomena seen in the "germinal centers" of lymph nodes throughout the body is a highly specific and characteristic histologic reaction to an infection by the fungus, the Histoplasma capsulatum.

Basing my thesis on that earlier extensive work, it appears that "chronic ulcerative colitis," "non-specific regional enteritis of the small intestine" and juvenile mesenteric lymphadenitis may well represent varying stages and degrees of infection of the human host by this unusual fungus, the Histoplasma capsulatum.

It also appears to be fairly well established that probably, on an average, about ten per cent of the general populace in an endemic area carry the stigmata of infection by this widespread fungus. In temperate climates, the Histoplasma capsulatum appears to be a far more benign organism and does not cause the high death rates that its infestations produce apparently in the tropics.

Conclusions

1. 1,205 instances where surgical tissues were excised from the colon for a wide variety of diseases have been reviewed to determine the incidence of Histoplasmosis.

2. In 179 examples of "chronic ulcerative colitis," 35.8 per cent were positive for Histoplasma capsulatum.

3. In 219 examples of "non-specific regional enteritis of the small intestine," the incidence of Histoplasmosis was 31.5 per cent.

4. Disregarding the high incidence of Histoplasmosis in 'chronic ulcerative colitis," the average incidence of this disease in the remaining "positive" histologic instances in the colon is 8.299 per cent. This incidence is in agreement with other published studies of the past five years.

5. It is highly probable that Histoplasma capsulatum may be the principal etiologic agent of "chronic ulcerative colitis," "non-specific regional enteritis of the small intestine" and juvenile mesenteric lymphadenitis. These three diseases may merely represent varying degrees of tissue reaction to the same organism and tempered by the individual's health and tissue resistance.

Varying Stigmata

6. It appears probable that between eight and ten per cent of the population in an endemic area of the United States bears varying stigmata of Histoplasmosis.

7. Apparently Histoplasmosis in the United States is a benign and mild disease, that seldom is rapidly fatal as it may be in the tropics. It also appears that this disease is very widespread in distribution and has only been recognized and paid any attention to in the past five years.

8. The "starry sky" of reactive hyperplasia seen in the "germinal centers" of lymph nodes is just as diagnostic and characteristic of Histoplasma capsulatum infections, as the typical tubercle formation is of Tuberculosis. As soon as this fact is generally accepted, and publicized the recognition of Histoplasmosis will be accelerated.

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Blood Banks to Meet September 3-5 in Boston

The 9th Annual Meeting of the American Association of Blood Banks will be held September 3-5 in Boston. Inquiries should be directed to Miss Marjorie Saunders, Secretary, 725 Doctors Building, 3707 Gaston Avenue, Dallas.

Texas District one Medical Association to Meet in Pecos Feb. 15

Annual meeting of District One of the Texas Medical Association will be held in Pecos, Texas, February 15, 1956. Dr. Delphin von Briesen of El Paso, president, has announced.

Presenting scientific papers will be:

Dr. James A. Evans, in the Cardiovascular division of the Department of Internal Medicine at the Lahey Clinic in Boston, "Modern Approach to the Treatment of High Blood Pressure".

Dr. Ross W. Rissler, El Paso, "Some Basic Concepts Regarding Recent Steroid Hormone Studies".

Dr. Branch Craige, El Paso, "Headache".

Dr. David M. Cameron, El Paso, "Whiplash Injuries of the Neck".

More Papers

Dr. Frederick Bornstein, El Paso, "Acute Cardiac Deaths from Conditions other than Coronary Occlusion".

Dr. Robert N. Caylor, El Paso, "Ocular Problems of Children".

Dr. E. S. Crossett, El Paso, "Injuries of the Chest".

Other officers are Dr. E. W. Schmidt, Pecos, vice-president, and Dr. Grady Morrow, El Paso, secretary-treasurer. Dr. Charles E. Oswalt of Fort Stockton is the Councillor for District One.

District One consists of the following counties in West Texas: El Paso, Hudspeth, Culberson, Reeves, Loving, Pecos, Presidio, Brewster, Jeff Davis, Ward and Winkler.

Clinical Notes From Grand Rounds

These notes are abstracts of opinions expressed by staff members during case presentations at the Friday Grand Rounds of the Pratt Diagnostic Clinic — New England Center Hospital.

The association of bone disease with Jewish origin should suggest the possibility of Gaucher's disease. This is a familial disturbance in which there may also be marked splenomegaly. Removal of the spleen at times will give some relief because of elimination of hypersplenism. When Gaucher's disease begins in infants, the prognosis is poor, but when it begins later in life, the prognosis is somewhat better.

▲ ▲ ▲

Measurement of the 24-hour urinary excretion of 17-hydroxycorticoids before and after the administration of ACTH is a useful procedure in the diagnosis of disorders of the adrenal cortex. Normally there is a moderate rise. In Addison's disease there is little if any change, but in Cushing's syndrome there is a marked rise in the excretion of this hormone.

▲ ▲ ▲

The serum iron is apt to be elevated in acute infectious hepatitis and low or normal in cirrhosis. Increased values may be due to lysis of liver cells.

Evaluation of Liver Function Tests

By William D. Sedwick, M. D., Las Cruces, N. M.

The accurate diagnosis of disease of the liver can produce a most perplexing, and at the same time, a most important problem. For instance, it is dangerous to the life of a patient with a common duct obstruction not to be surgically explored, and equally as dangerous to operate on a patient with severe hepatitis. However, this mistake will still be made, since the liver has such a complex structure and physiology that a correct diagnosis is difficult. Much has been learned about the liver, but equally as much remains to be discovered.

It is the purpose of this paper to again present a discussion of liver physiology and an evaluation of the clinical observation and laboratory examinations which are helpful in arriving at a diagnosis.

Physiology

A brief review of hepatic physiology will lay the foundation for the later discussion of liver function tests. The liver is composed of three major systems: the blood vessels, the biliary systems, and the liver cells (or parenchyma). A pathologic process may involve one system initially, but if the process continues, all three systems will eventually be involved.

Vascular disorders are usually the result of impeded outflow in the hepatic veins. Most commonly, this is due to right heart failure, but also to constrictive pericardial disease, obstruction of the inferior vena cava by tumor, or thrombosis of the hepatic veins (Chiari's Syndrome). Continued congestion subjects the parenchymal cells surrounding the central vein of the lobule to anoxia and necrosis, thus the "Nutmeg liver". After months of congestion, fibrosis, both central and portal, will develop.

Biliary disorders usually result from the obstruction of the common duct. Variable pathologic changes will result, depending upon the acuteness of the obstruction, its duration, the presence and function of the gallbladder, and the development of infection.

Parenchymatous disorders result from infectious agents, toxins, anoxia, metabolic and nutritional difficiencies.

Physiological Functions of the Liver; with Related Tests

At this point, brief discussion of the various physiological processes performed by the liver and hence involved in pathologic processes, is in order.

I. Bile Pigment Metabolism: The normal red blood cell lives about 120 days, so that approximately one per cent of the circulating cells are destroyed each day by the reticulo-endothelial system. The hemoglobin is broken down into the various constituents. One of the "by products" is bilirubin. This is transported to the liver as the large molecule bilirubinglobin. Here the globin is separated for re-use and the bilirubin (or bilirubinate) is excreted into the intestinal tract. Bilirubin is first reduced by bacterial action in the colon, to urobilinogen, a colorless chromagen. It is then oxidized, again by bacterial action, to urobilin, an orange-brown pigment. There is good evidence that as much as fifty per cent of the urobilinogen is reabsorbed into the portal circulation, returned to and removed by the liver. A small portion normally passes on into the systemic circulation and is excreted by the kidney.

Figure I diagramatically illustrates the normal bile metabolism.

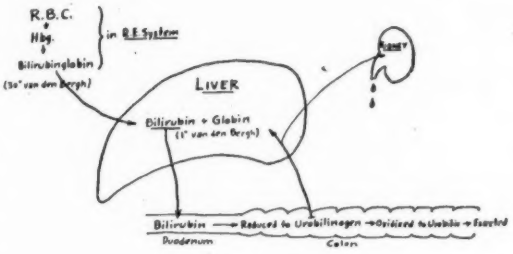

Fig. 1

Types of Jaundice

From the diagram (Fig. I), can now be deducted the mechanisms of the three types of Jaundice. The simplified classification of (1) Surgical or obstructive Jaundice, (2) Medical or parenchymal Jaundice, and (3) Hemolitic or prehepatic Jaundice will be used.

I. Surgical (or obstructive)

This is due to obstruction of the extraphepatic bile ducts. (Post hepatic Jaundice of Ducci). Here the serum one-minute bilirubin is increased. Urine bilirubin is present. There is no bilirubin passed into the intestinal tract, so no urobilinogen is in the stool (clay colored), and thus no urobilinogen occurs in the urine.

2. Medical-Parenchymal (including hepatocanalicular pathology). This is the hepatic Jaundice of Ducci.

There is a leak back of bilirubin into the hepatic vein due to loss of integrity of some of the parenchymal cells and canaliculi. Serum bilirubin is increased and bile is excreted in the urine. There is increased excretion of urobilinogen in the urine. This is due to the fact that, although urobilinogen is absorbed in normal fashion from the intestinal tract, the "sick" parenchyma cannot re-excrete it, and is then passed on to the systemic circulation and excreted by the kidney.

3. Hemolytic Jaundice - or (Acholuric Jaundice) Prehepatic Jaundice of Ducci.

In this condition more bilirubinglobin is offered to the parenchyma of the liver than it can excrete per unit of time. Thus, the one minute bilirubin may be slightly increased, but the total bilirubin is markedly increased. Since the bilirubinglobin mollecule is too large to pass thru the glomerulus of the kidney, it stays in the circulation. Thus, no bile occurs in the urine (Acholuric Jaundice). However, there is increased stool uribilinogen and increased urine urobilinogen.

Comments

The following comments are now apropos. Medical and Surgical Jaundice often are not "pure". In any hollow tube in which there is an element of obstruction, infection usually develops. Thus, in common duct obstruction, infection will develop above the obstruction, converting some of the bilirubin to urobilinogen, which is then excreted in the urine. Thus is explained the presence of some urinary urobilinogen in obstructive jaundice.

The van den Bergh test is of little help in differentiating between Medical and Surgical Jaundice. It will help differentiate hemolytic jaundice from the other types. However, a much simpler differentiation is presence or absence of bile in the urine. Typically, hemolytic jaundice is acholuric.

II. Synthetic and Metabolic Functions

A. Protein synthesis is one of the important synthetic functions of the liver. These are prothrombin, fibrinogen, cholinesterases, and albumin. Tests of this function are: (1) Floculation tests, (2) Prothrombin determination, and (3) Quantitative values of proteins.

B. Carbohydrate metabolism - Tests of this function are the Glucose tolerance test and the Galactose tolerance and clearance test. The Galactose clearance from the blood stream depends entirely on proper liver function and is not variable by other body physiology. Thus, it is a more accurate test of the carbohydrate metabolic function of the liver than is the glucose tolerance test.

C. Fat metabolism - Tests of this function are blood cholesterol and cholesterol ester determination, and Vitamin A Esters.

D. Vitamin synthesis and metabolism - The fat soluble vitamins, A, D, E, and K, require bile for proper absorption from the intestinal tract. The water soluble vitamins can be absorbed without bile being present, but their metabolism is altered by liver disease.

E. Excretory functions - Certain substances normally produced in the body, or that are introduced, and excreted by the liver. These are: (1) Alkaline phosphatase, (2) Bile salts, (3) Dyes, such as Bromsulfalein (BSP), and sometimes foreign substances.

F. Detoxification and Conjugation - Narcotics are detoxified by the liver. Hence in liver disease

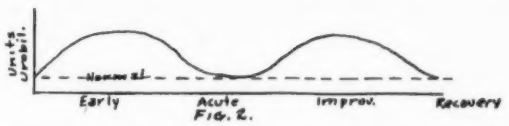

Fig. 2.

normal doses of narcotics may produce more sedation than is desired.

Estrogens and other hormones are detoxified in the liver. In cirrhosis, estrogens are not detoxified and the resulting emergence of some female characteristics are noted, such as loss of axillary and pubic hair, increased size of breasts, loss of libido, etc. It is also thought that part of the cause of ascites and edema in cirrhosis may be due to the lack of detoxification of the antidiuretic hormone produced in the pituitary gland.

Benzoic acid can be introduced into the body where the liver conjugates it with glycine to produce hippuric acid, which is then excreted by the kidney.

G. Water metabolism - Here again the lack of detoxification by the liver of the antidiuretic hormone comes into play. Also the decreased production of serum albumin with the resulting decrease in intravascular osmatic pressure has an effect. Normal electrolyte concentration may also be effected.

H. Heat Regulation - The methods for this phenomenon are as yet unknown, but there is reason to believe that the liver is involved.

I. The effect on the hematopoetic system and hemostosis - It is well known that in chronic disease of the liver there is frequently a shortened survival time of red blood cells. This results in anemia. Capillary integrity is sometimes involved. Also, in the severe liver diseases the production of prothrombin and fibrinogen are reduced.

J. "Filtering" bacteria - There is little doubt that bacteria are frequently present in the portal circulation and carried to the liver. Here they are phagocytized by the Kupffer cells.

Liver Function Tests

For what reasons do we employ liver function tests?

I. To help in the differential diagnosis between Medical and Surgical Jaundice.

II. To diagnose unsuspected liver disease and to assist in the follow-up of acute liver disease during recuperation.

III. To help in the estimation of the severity of liver disease, and in the prognosis as to outcome.

I. Differentiation between Medical and Surgical Jaundice.

The differentiation between Medical Jaundice and Surgical Jaundice often is not too difficult. There are, however, those cases of jaundice which sorely tax the ingenuity and intelligence of the physician and defy accurate distinction.

A detailed history and physical examination with the routine blood, urine, and stool examinations frequently are sufficient to establish an accurate diagnosis. For instance, Acholuric Jaundice means hemolytic jaundice, and in so far as the determination of the cause for jaundice is concerned, there is little reason, except academic, for running further tests.

Basic screening procedures:

a. History
b. Physical examination
c. Routine blood studies, including platelet estimation and serology.
d. Routine urine, including an accurate test for bile, such as the Harrison spot test.
e. Stool - inspection and test for occult blood.
f. Bilirubin metabolism - (screening)
   1. Icterus index. The color of the plasma, is often sufficient for screening.
   2. Bilirubin in urine - Harrison spot test.

When the above screening procedures are accurately performed, a presumptive diagnosis often can be made with reasonable accuracy. That is, whether hepatocellular, or parenchymal pathology is at fault; or whether hepatocannicular, or duct obstruction exists. Appropriate tests can then be selected.

It should be emphasized that results of the various tests can be confusing in that abnormal results may be obtained in both Medical and Surgical Jaundice. The degree of abnormality will then be significant. For instance, the value of serum alkaline phosphatase is often elevated in hepatitis due to the reduced function of "sick" parenchymal cells. However, it is usually much higher in obstructive jaundice; that is, above 15 Bodanski Units.

Presumptive Tests for Metabolic or Excretory Function of Parenchymal Cells.

1. Bromsulfalein Retention (BSP)
2. Hippuric acid excretion
3. Galactose tolerance and clearance
4. Bilirubin excretion
5. Level of plasma prothrombin and response to Vitamin K.
6. Total cholesterol and percentage of cholesterol esters
7. Abnormalities of proteins of plasma and serum
   a. Quantitative changes in concentrations of plasma fibrinogen, serum globulin, serum albumin, and cholinesterase.
   b. Qualitative changes in serum proteins - stability reactions of serum.
      1. Cephalin - Cholesterol flocculation.
      2. Thymol turbidity.
      3. Thymol flocculation.
      4. Collodial - red.
      5. Takata - Ara reaction.

Presumptive tests of obstructive disease or other disease of the biliary tract.

1. Alkaline phosphatase of serum.
2. "Negative" flocculation and turbidity tests
3. Total cholesterol
4. X-ray examination - introvenous cholangography

Examinations bearing on all groups of disease of the liver and biliary system.

1. X-ray of the gallbladder and gastro-intestinal tract.
2. Surgical procedures:
   a. Needle biopsy of the liver.
   b. Abdominal exploration
   c. Direct cholangography by injection into the duct at surgery.

Table No. I presents in outline form the factors in the differential diagnosis of Jaundice.

Differential Diagnosis of Jaundice

The following table is presented in an attempt to record in outline form, the many points to be considered in the differential diagnosis of Medical and Surgical Jaundice.

TABLE I

	Surgical	Medical Hepatic	Medical Hemolytic
1. History:			
Onset with pain	+	—	—
Itching	+	—	—
Fever	—	+	(±)
Chills	+	+	+
Indigestion	+	+	—
Achelia	+	—	—
Choluria	+	+	—
Melena	—	+	—
Hematemesis	—	+	—
Hemorrhagic diathesis	—	+	—
Anemia	—	+	+
Malaria	—	—	+
Exposure to toxic agents	—	+	—
Transfusions	—	+	+
Immunizations	—	+	—
Alcoholism	—	+	—
Adequate diet	—	+	—
2. Physical Examination:			
Jaundice	+	+	+
Pallor	—	(±)	+
Abnormal nutritional state	(±)	+	—
Spider hemangiomata	—	+	—
Abnormal Spleen & liver	—	+	+
Fluid in chest or abdomen	—	+	—
Increased collateral circulation	—	+	—
Edema	—	+	—

+ or — indicates the relative importance of the presence or absence of the symptom or sign.

II. Tests used for detection and follow-up:

1. Urine bile or serum van den Bergh.
2. Urine urobilinogen. This is a very sensitive test.
3. Bromsulfalein excretion. This is a test which is rather safe in mild Jaundice, but is of no value in severe Jaundice.
4. Flocculation tests.

3 Prognosis and Severity:

1. Serum albumin
2. Cholinesterase activity
3. Prothrombin activity
4. Urinary urobilinogen
5. B. S. P. (In the absence of much Jaundice)

4. Laboratory:

	Normal Value	Medical		
		Surgical	Hepatic	Hemolytic
Routine Blood, Urine, Stool				
RBC	4.5 ml.	N	N or decr.	Decr.
Hbg	13-15 gms	N	N or decr.	Decr.
WBC	6-8000	N to incr.	N or decr.	N to incr.
Poly	60-70%	N to incr.	N or decr.	N to incr.
Lymph	30-40%	N to incr.	N or incr.	N to incr.
Platelets	100-300M	N	N	N
Serology	Negative	?	?	?
Stool Inspection	Brown	N to light	Pasty	Dark
Stool Occult Blood	Negative	Negative	—or	Negative
Bilirubin Melatrolis (Screening Exam)				
Icterus (or serum bilirubin)	10U(I);0.8(B)	Incr.	Incr.	Incr.
Urinary bile (Spot test)	Negative	Pres.	Pres.	Negative
Special Tests				
1. Bilirubin Metabolism				
a. Serum Imin. bilirubin	0.2mg	50-80%	40-60%	N
Serum Total bilirubin	0.8mg	7 - 45	1 - 12	1 - 10
b. Urobilinogen in Urine 2 hr.	0.5 - 1.5	Abs. to sl.	0 - 3	5 - 60
c. Stool urobilinogen	350/100gm.	Absent	Slight	Increased
2. Presumptive tests for metabolic or excretory function of parenchyma				
a. BSP % retention	0	Of no value	Incr.	0)
b. Hippuric Acid Excretion	1 gm.	N	Decr.	N
c. Galactose Clearance	0	20mg	20mg	N
d. Bilirubin Excretion	0-5%	Decr.	Decr.	N
e. Level of Prothrombin Response to Vit. K	90-100%	N to decr.	Decr.	N
		Incr.	None	None
f. Total Cholesterol mg/100cc	120 - 300	Incr.	N to	N
g. Abnormalities of Bld. Port.				
1. Quantitative changes				
Albumin	5.0gm	N	Decr.	N
Globulins	2.0gm	N	Incr.	N
Fibrinogen	0.2-0.4gm	N	N to decr.	N
2. Qualitative changes				
Sterility reactions				
Cephalin Choles. Floc.	Negative	N	3 - 4	N
Thymal Turbidity, Units	3 - 4	N	10 - 40	N
Thymal Floc.	Negative	N	3 to 4	N
Colloidal Red		N	Incr.	N
Colloidal Gold		N	Incr.	N
Takata - Ora		N	Incr.	N
h. Cholinesteroso Activity Units of decrease of Ph per hr.	0.62 - 1.26	N	00.5	N
3. Presumptive tests for Obstruction				
a. Alkaline phosphatase (s)	1-4 B.U.	15 B. U.	15 B. U.	N
b. "Negative" Floc, tests		Present	Absent	Absent
c. Total cholesterol	120-300		N or	N
d. Drainage of Duod.	Bile	No bile	Bile	Bile
e. X-ray exma-intravenous cholongraphy		Obst.	---	---

Practical Differential Diagnosis of Medical and Surgical Jaundice

The following table presents in outline form tests that can be used, from the practical standpoint, in the differential diagnosis of Medical and Surgical Jaundice. These are tests which are readily available, and in a great majority of the cases, will be of great help in making a diagnosis.

TABLE 2

	Medical	Surgical
WBC	Dec.(lymph. up)	Usually up-infect
Floc. Tests	Positive	Negative
Choline Esterase	Decrease	Normal
Albumin	Decrease	Normal
Prothrombin	Decrease	Normal
Alk. Phos.	Less than 15 B. U.	More than 15 B. U.

Of interest are the following comments:

1. BSP excretion is of no value in a Jaundiced patient.
2. Bilirubin (van den Bergh) does not differentiate between Medical and Surgical Jaundice. It is of value only in the differential between hemolytic and other types of Jaundice.
3. Serum cholesteral and per cent of cholesteral esters are effected by other conditions than bilirubin metabolism. Therefore, they are not nearly as accurate as the level of the serum alkaline phosphatase.

Summary

1. A brief review of the physiology of the liver with related physical signs and laboratory tests is presented.

2. The problem of the differential diagnosis of Medical and Surgical Jaundice is discussed.

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Clinical Notes From Grand Rounds

These notes are abstracts of opinions expressed by staff members during case presentations at the Friday Grand Rounds of the Pratt Diagnostic Clinic — New England Center Hospital.

Dextran has proved of limited value in the treatment of nephrotic states because of its sodium content. A nine per cent, sodium-free preparation of dextran is now being tried with some apparent success. It must be remembered, however, that this substance accumulates in the body and must be used with some caution, because occasionally it has apparently induced hemorrhage.

The Use of 'Ilotycin' (Continued from Page 97)

TABLE 1. — VARIOUS DERMATOSES TREATED WITH RESULTS OF TREATMENT

Disease	Total No. Cases	Oral and Local Therapy	Oral Therapy	Local Therapy	Excellent Results	Good Results	Partial Improvement	No Improvement	Smallest Total Dose, GM.	Largest Total Dose, GM.
Pyoderma	9	8	---	1	8	1	---	---	5.6	9.8
Eczema, Infected	8	5	---	3	---	1	7	---	5.6	12.6
Folliculitis	6	4	---	2	---	3	3	---	8.2	12.0
Epidermophytosis, Infected	3	2	---	1	1	1	1	---	4.2	12.6
Cellulitis	2	2	---	---	2	---	---	---	8.4	12.6
Psoriasis	3	---	2	1	---	---	---	3	10.8	14.0
Acne Conglobata	1	1	---	---	---	---	1	---	30.0	---

received both oral and local therapy; two patients received the drug by mouth and eight patients received only local therapy.

The drug was of definite value in those conditions in which pyogenic organisms were the main cause of the disease.

In conditions such as infected eczema and infected epidermophytosis, the administration of the drug was of value in clearing up the secondary infection, however, it had little effect on the underlying primary dermatosis.

No gastro-intestinal upsets resulted from treatment and monilial eruptions did not occur as a complication of treatment.

Local irritation was not observed from the ointment used.

No blood dyscrasias or evidence of renal damage were noted in our series.

Acknowledgment

The photographs were made by Mr. Lester Heitlinger, Chief, Medical Illustration Laboratory, Veterans Administration Hospital, Tucson, Arizona.

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Post-Graduate Cardiac Session Scheduled in El Paso March 3

Program for the General Medicine and Cardiology session of the El Paso branch of the University of Texas Postgraduate School of Medicine, to be held in the El Paso County Medical Society's Turner home at 1301 Montana Street in El Paso on March 3, has been announced by Dr. Ralph H. Homan of El Paso, dean of the El Paso branch.

Dr. Saul B. Appel, El Paso, "Ballistocardiography in its Simplest Forms and Interpretation"; Dr. J. A. Bernard, El Paso, "The Newer Diuretics"; Dr. Arthur Ruskin, Associate Professor of Medicine at the University of Texas Medical Branch at Galveston, "Newer Advances in Coronary Artery Diseases"; Dr. Edward Egbert, El Paso, "The Newer Vasodilators, Classifications, Indications, Actions and Value"; Dr. Ross W. Rissler, El Paso, "Some Basic Concepts Regarding Recent Steroid Hormone Studies"; Dr. Ruskin, "Newer Advances in Hypertensive Therapy"; Dr. F. C. Golding, El Paso, "Virus Infections"; Dr. E. S. Crossett, El Paso, "Cardiac Catherization and its Indications."

The meeting will start at 8:30 a. m. and close at 4:10 p. m.

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